MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

18700 WARD STREET
FOUNTAIN VALLEY, CALIFORNIA 92708

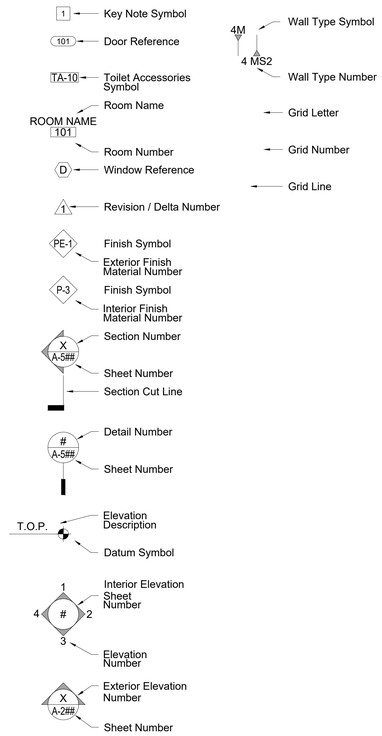
ADMINISTRATIVE BUILDING - SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ABBREVIATIONS

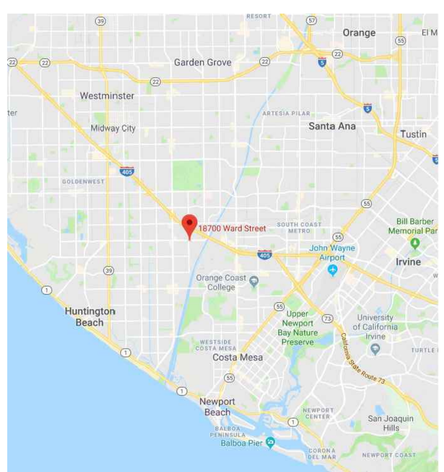
&	And	FAB.	Fabricate	PEN.	Penetration
L	Angle	FAST.	Fasten (er)	PERF.	Perforate (d)
@	At	F.D.	Floor Drain	PERI.	Perimeter
¢	Penny	FDN.	Foundation	PG.	Page
Ø	Round	F.E.	Fire Extinguisher	P.L.	Property Line
w/	With	F.E.C.	Fire Extinguisher Cabinet	PL.	Plate
A.	Area	F.F.	Finished Floor	P.LAM.	Plastic Laminate
A.B.	Anchor Bolt	F.G.	Finished Grade	PLAS.	Plaster
ABV.	Above	F.H.	Fire Hydrant	PLUMB.	Plumbing
A.C.	Asphaltic Conc.	FILL.	Fillet	PLYWD.	Plywood
A / C	Air / Condition	FIN.	Finish (ed)	P.N.	Plywood Nails
ACC.	Access Conditioning	FIXT.	Fixture	PNL.	Panel
ACOUST.	Acoustic (al)	F.L.	Flow Line	PR.	Pair
A.D.	Area Drain	FL. / FLR.	Floor	PRCST.	Precast
ADD.	Addendum	FLEX.	Flexible	PREFAB.	Prefabricate (d)
ADD'L.	Additional	FLSH'G.	Flashing	PRESS.	Pressure
ADJ.	Adjacent	FLUOR.	Fluorescent	PRF.	Preformed
ADJT.	Adjustable	F.O.C.	Face Of Concrete	P.S.F.	Lbs. / Sq. Foot
A.F.F.	Abv. Fin. Flr.	F.O.F.	Face Of Finish	P.S.I.	Lbs. / Sq. Inch
AGG.	Aggregate	F.O.M.	Face Of Masonry	P.T.	Pressure Treated
ALT.	Alternate	F.O.S.	Face Of Stud	PT.	Point (ed)
ALUM.	Aluminum	F.O.W.	Face Of Wall	PTD.	Painted
ANOD.	Anodized	F.P.	Fireproof (ed)	P.T.D.	Paper Towel Dispenser
A.P.	Access Panel	FR.	Frame (d)	PVMT.	Pavement
APPR.	Approved	FRMG.	Framing		
APPROX.	Approximate	F.S.	Finished Surface	Q.T.	Quarry Tile
ARCH.	Architect (ural)	FT.	Foot, Feet		
ASPH.	Asphalt	FTG.	Footing	R.	Riser
AUTO.	Automatic	FURR.	Furred, Furring	R.A.	Return Air
AVG.	Average	FUT.	Future	RAD.	Radius
				R.D.	Roof Drain
B.D.	Building Dept.	GA.	Gauge	REF.	Reference
BD.	Board	GALV.	Galvanized	REFER.	Refrigerator
BEL.	Below	G.B.	Grab Bar	REG.	Register
BIT.	Bituminous	G.C.	General Contractor	REINF.	Reinforced (ing)
BLDG.	Building	GEN.	General	REM.	Remove
BLK.	Block	G.I.	Galvanized Iron	REQ.	Required
BLK'G.	Blocking	GL.	Glazing, Glass	RESIL.	Resilient
BLT.-UP	Built-up	GLB.	GlueLaminated Beam	RET.	Return
B.M.	Bench Mark	GND.	Ground	REV.	Revise (ed) Revision
BM.	Beam	GR.	Grade, Grading	RFG.	Roofing
B.N.	Boundary Nailing	GRT.	Grout	RFTR.	Rafter
BOT.	Bottom	GYP.	Gypsum	R.H.	Redhead Bolt
B.P.	Bearing Plate	GYP. BD.	Gypsum Board	R.H.B.	Recessed Hose Bibb
BRCG.	Bracing			R.I.	Roughin
BRG.	Bearing	H	High	RM.	Room
BTWN.	Between	H.B.	Hose Bibb	RO.	Rough
B.U.R.	Built-up Roofing	H.C.	Hollow Core	R.O.	Rough Opening
BVL.	Bevel (ed)	H.D.	Heavy Duty	R.O.W.	Right Of Way
		HD.	Head	R.S.	Resawn
C	Camber	HDCP.	Handicap	RWD.	Redwood
CAB.	Cabinet	HDR.	Header		
C.B.	Catch Basin	HDWD.	Hardwood	S.	South
C.C.	Center To Center	HDWE.	Hardware	S.A.	Supply Air
CEM.	Cement	HGR.	Hanger	S.C.	Solid Core
CER.	Ceramic	H.M.	Hollow Metal	SCHED.	Schedule
C.F.	Cubic Feet	HORIZ.	Horizontal	SCR.	Screw
C.F.M.	Cubic Feet / Min.	H.P.	High Point	S.D.	Storm Drain
C.H.B.	Concealed H.b.	HR.	Hour	SDG.	Siding
CHAM.	Chamfer	HT.	Height	SEAL.	Sealant
C.I.	Cast Iron	HTG.	Heating	SECT.	Section
C.I.P.	CastInPlace	HTR.	Heater	SEIS.	Seismic
CIR.	Circle	HVAC	Heating, Ventilation, Air Conditioning	SEL.	Select
C.J.	Control Joint			S.F.	Sq. Foot / Feet
C.L.	Center Line	H.W.	Hot Water	SHT.	Sheet
CLG.	Ceiling			SHTG.	Sheathing
CLK'G.	Caulking	I.D.	Inside Diameter / Dimension	SIM.	Similar
CLR.	Clear	IN.	Inch (es)	SL.	Sleeve
CLS.	Closure	INCL.	Included / Including	SM	Smooth
C.M.U.	Concrete Masonry Unit	INFO.	Information	SPCG.	Spacing
C / O	Clean Out	INSUL.	Insulation	SPECS	Specifications
C.O.	Clear Opening	INT.	Interior	SPL.	Splash
COL.	Column	INV.	Invert	SQ.	Square
COMB.	Combination			S.S.	Select Str.
COMP.	Compact (ed)	JAN.	Janitor	S / S	Service Sink
COMPO.	Composition	JST.	Joist	S.ST.	Stainless Steel
CONC.	Concrete	JT.	Joint	STAG.	Stagger (ed)
CONN.	Connection			STD.	Standard
CONST.	Construction	K.B.	Hilti KwikBolt	STG.	Seating
CONT.	Continuous	KIT.	Kitchen	STIFF.	Stiffener
CONTR.	Contractor	K.PL.	Kick Plate	STL.	Steel
CORR.	Corrugated			STOR.	Storage
CPT.	Carpet	LAG.	Lag Bolt	STR.	Structural
CSK.	Countersunk	LAM.	Laminated	SUB.	SubContractor
CTR.	Center	LAT.	Lateral	SUSP.	Suspended
C.T.	Ceramic Tile	LAV.	Lavatory	SW.BD.	Switch Board
CU.	Cubic	LDGR.	Ledger	SYM.	Symbol
C. YD.	Cubic Yard	LG.	Long	SYS.	System
		LGTH.	Length		
D.	Drain	L.H.E.	Low Hydrogen Electrode	TR.	Tread
DBL.	Double	L.L.H.	Long Leg Horizontal	T&B	Top & Bottom
DCK'G.	Decking	L.L.V.	Long Leg Vertical	T&G	Tongue & Groove
DEMO.	Demolition / Demolish	L.P.	Low Point	TEL.	Telephone
DEPR.	Depress (ion)	LT.	Light	TEMP.	Temper (Ed)
DET.	Detail	LTWT.	Lightweight	THK.	Thick (Ness)
D.F.	Douglas Fir			THR.	Threshold
D.H.	Double Hung	MACH.	Machine	THRU	Through
DIA.	Diameter	MAS.	Masonry	T.	Top
DIAG.	Diagonal	MAT'L.	Material	T.O.B.	Top Of Beam
DIM.	Dimension	MAX.	Maximum	T.O.C.	Top Of Curb
DISC.	Discontinuous	M.B.	Machine Bolt	T.O.F.	Top Of Framing
D.L.	Dead Load	MECH.	Mechanical	T.O.L.	Top Of Ledger
DISP.	Dispenser	MED.	Medium	T.O.P.	Top Of Parapet
DN.	Down	MEM.	Member	T.O.PVG.	Top Of Paving
DIV.	Division	MEMB.	Membrane	T.O.S.	Top Of Sheathing
DR.	Door	M.	Men	T.O.SLB.	Top Of Slab
D.P.	Dampproofing	MET.	Metal	T.O.STL.	Top Of Steel
D.S.	Down Spout	MFR.	Manufacture (r)	T.O.W.	Top Of Wall
DWG.	Drawing	M.H.	Manhole	T.S.G.	Tapered Steel Girder
DWR.	Drawer	M.I.	Malleable Iron	TYP.	Typical
		MIN.	Minimum		
E.	East	MIRR.	Mirror	U.B.C.	Uniform Building Code
EA.	Each	MISC.	Miscellaneous	UNF.	Unfinished
E.B.	Expansion Bolt	MLDG.	Moulding	U.N.O.	Unless Noted Otherwise
E.F.	Each Face	M.O.	Masonry Opening	UNREINF.	Unreinforced
E.J.	Expansion Joint	MT.	Mount	URI. UTIL.	Urinal Utility
EL.	Elevation	MTD.	Mounted		
ELECT.	Electric (al)	MULTI.	Multiple	VAR.	Varies
ELEV.	Elevator			V.B.	Vapor Barrier
E.N.	Edge Nailing	N.	North	V.C.P.	Vitreous Clay Pipe
ENCL.	Enclosure	NAT.	Natural	VERT.	Vertical
E.	East	N.G.	Natural Grade	V.G.	Vertical Grain
EA.	Each	N.I.C.	Not In Contract	VNR.	Veneer
E.B.	Expansion Bolt	NO.	Number	VOL.	Volume
E.F.	Each Face	NOM.	Nominal	V.T.	Vinyl Tile
E.J.	Expansion Joint	N.S.	Near Side	V.T.R.	Vent Thru Roof
EL.	Elevation	N.T.S.	Not To Scale		
ELECT.	Electric (al)			W	West
ELEV.	Elevator	O /	Over	W /	With
E.N.	Edge Nailing	O.A.	Overall	W / C	Water Closet
ENCL.	Enclosure	OBS.	Obscure	WD.	Wood
ENG.	Engineer	O.C.	On Center	WDW.	Window
EQ.	Equal	O.D.	Outside Dia. / Dim.	W.H.	Water Heater
EQUIP.	Equipment	OFD.	Overflow Drain	WH.	Wall Hung
E.S.	Each Side	OFS.	Overflow Scupper	W.I.	Wrought Iron
EST.	Estimate	O.H.	Overhead	W / O	Without
E.W.	Each Way	O.H.D.	Overhead Door	W.	Women
EXH.	Exhaust	OPG.	Opening	WP.	Waterproof (ed) (ing)
EXIST.	Existing	OPP.	Opposite	W.R.	Water Resistant
EXP.	Expand			WSCT.	Wainscot
EXPO.	Expose (d)	PAR.	Parallel	WT.	Weight
EXT.	Exterior	PART.	Partition	WTH.	Width
O.L.	Occupant Load	P.C.	Pipe Column		
		P.C.F.	Lbs. / Cubic Feet	YD.	Yard

B

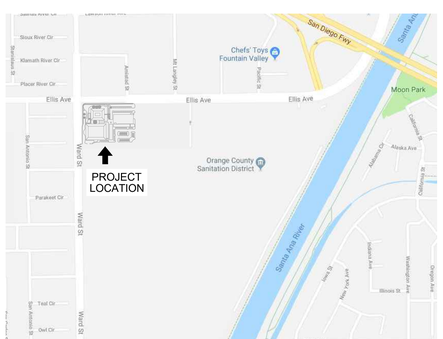
SYMBOLS



VICINITY MAP



LOCATION MAP



PROJECT DIRECTORY

OWNER: Municipal Water District of Orange County
18700 Wards st, Fountain valley, CA 92708
Street Address
City, State & Zip
Tel: 714.963.3058
Contact: Cathy Harris
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MEP ENGINEER: IDS Group
Rob O'Neil
1 Peters Canyon Road, Suite 130
Irvine, California 92606

AUTHORITY HAVING JURISDICTION (AHJ) : CITY OF FOUNTAIN VALLEY

CONCURRENCE BY:

PROPERTY OWNER

FIRE ALARM / FIRE SPRINKLER

-WILL BE SUBMITTED SEPARATELY BY OTHERS

-PLANS FOR ALL FIXED FIRE PROTECTION EQUIPMENT SUCH AS STANDPIPES, SPRINKLER SYSTEMS AND FIRE ALARM SYSTEMS, MUST BE SUBMITTED TO THE BUILDING DIVISION AND APPROVED BY THE FIRE DEPARTMENT BEFORE THIS EQUIPMENT IS INSTALLED.

PROJECT INFORMATION

TITLE: Municipal Water District of Orange County
Administration Building Seismic Retrofit, ADA Compliance

ADDRESS: 18700 Ward Street
Fountain Valley, California 92708

CONSTRUCTION CLASSIFICATION: VB

OCCUPANCY CLASSIFICATION: B & A

SPRINKLERS: FULLY SPRINKLED

NUMBER OF STORIES: 1

PROJECT AREA: 13,421 SF.

TOTAL AREA: 13,421 + 296 = 13,717 SF.

APPLICABLE CODES

LEGAL JURISDICTION: CITY OF FOUNTAIN VALLEY

APPLICABLE CODES:
2016 California Code of Regulations
2016 California Building Standards Code (Title 24)
2016 California Building Standards Administrative Code
2016 California Building Code
2016 California Electrical Code
2016 California Mechanical Code
2016 California Plumbing Code
2016 California Energy Code
2016 California Fire Code
2016 California Existing Building Code
2016 California Green Building Code
2016 California Reference Standards Code

THIS PROJECT SHALL COMPLY WITH THE ABOVE CODES.

SCOPE OF WORK

SEISMIC RETROFIT AND TENANT IMPROVEMENT OF MUNICIPAL WATER DISTRICT OF ORANGE COUNTY ADMINISTRATION BUILDING (MWDOC). NON STRUCTURAL IMPROVEMENTS-TO IMPROVE THE SEISMIC PERFORMANCE OF LIMITED NON-STRUCTURAL ELEMENTS THROUGH UPGRADE OF BRACING, SUPPORTS, OR RESTRAINTS. DEMOLITION OF WALLS, CEILING, FINISHES AND ELECTRICAL. NEW PARTITIONS FINISHES, ELECTRICAL AND CEILINGS.

OCCUPANCY LOAD CALCULATIONS

OCCUPANCY B 6049 SF +2132 SF	CODE PER. 100 GROSS	OCCUPANT LOAD 82 PERSONS
OCCUPANCY A 1540 SF	11 GROSS	140 PERSONS

TOTAL BLDG AREA = 13,421SF
TOTAL OCCUPANTS = 180 PERSONS
TOTAL OCCUPANT LOAD
(CBC TABLE 1104.1.1) = 222 PERSONS

SHEET INDEX

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS

IDS GROUP

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

STAMP

ISSUE		
REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

SHEET TITLE

COVER SHEET

SHEET NUMBER

G-001

SHEET NO. OF

18. FIELD APPLICATION OF PEDESTRIAN PROTECTION

Construction activities including additions, alterations, and demolitions shall provide pedestrian protection pursuant to section 3306 of the California building code. To determine the type of protection required for pedestrians,measure the ultimate height of construction with consideration for building setbacks and projections from the building. For sloping sites, measure the height of the building from construction edge of the walkway and the setback distance between the walkway and the building line.

Below are requirements to be addressed in the design of pedestrian protections:

A. Walkways shall provide sufficient width with the minimum of 4 ft. Clear.

B. Directional barricades shell be provided as needed where the walkway extends into the street.

C. Construction railings shall be at least 42 inches in height.

D. Barriers shall be a minimum of 8 ft. In height and be designed to resist loads required.

E. Such protection shall be maintained in place and kept in good order. Until work is completed.

F. Whenever a walkway must extend into the roadway, a railing is required on the street side.

16. INSTRUMENTS OF SERVICE

A. The Instruments of Services are any expression, whether tangible or intangible, of creative worked performed by a design professional for a project, such as:

- models
- sketches and drawings
- specifications

The instruments of service are also known as design documents and construction documents.

According to the Architect's Practice Act, Business and Professions Code section 5536.4, no person may use an architect's instruments of service, as those professional services are described in paragraph (2) of subdivision (b) of section 5500.1, without the consent of the architect in a written contract, written agreement, or written license specifically authorizing that use.

The plans and specifications are complimentary and intended to convey the design intent of the project. They are not intended to supplant the general contractor's construction expertise, and, in fact, rely on the contractor to clarify and/or obtain any elements of needed information PRIOR to the submission of a bid. The contractor's bid shall be assumed to include the sufficient costs to construct all work shown on the documents, whether or not adequately described in the documents, in order to provide the owner a safe, complete and fully functional project.

B. The scope of this project is as generally depicted in these instruments of service as part of the contract documents. Work including: points of connection, not specifically depicted, that need to be made are the responsibility of the general contractor. All work performed even in remote areas of the building or site, pertaining to this project shall comply with the intent of contract documents.

C. These contract documents cover the furnishing and installation of materials and work as called for on the drawings or in the specifications (or in both) which are bound separately and are a part of the contract. It shall be the responsibility of each contractor to check with the architectural drawings before finalizing their bid and before the installation of their work. Any discrepancy between the architectural and the consulting engineer(s) drawings shall be brought to the architects attention by written request for clarification. Any work installed in conflict with the architectural drawings shall be corrected by the contractor at his own expense and at no expense to the owner or architect.

D. General requirements, describing the project's administrative requirements and the physical aspects of construction, are provided within each professional discipline's project specification and general notation. General requirements are not limited to the instrument of services and may extend to the contract documents and owner requirements.

E. The project specifications consisting of the written requirements for material, equipment, systems, standards and workmanship for the work, and performance of related services are contained within each of the architect and the architect's instrument of services. Refer to general notes for additional project standards information. Documents indicated as 'reference document' are not considered instruments of services and are being issued to provide assistance during the regulatory agency contract document review.

F. Refer to life safety and accessibility diagrams that indicate provisions within existing conditions.

G. These drawings are based on field observation and/or documents furnished by the owner. The architect shall be notified immediately by the contractor of any discrepancies or other questions pertaining to the contract documents.. If obvious omissions or contradictory situations in the contract documents are discovered to exist, they should be immediately called to the attention of architect for clarification.

H. All dimensions take precedence over scale unless otherwise noted by a plus/minus dimension. Contractor shall check accuracy of dimensions on plans with actual field dimensions. The contractor shall report to the architect all conditions which prevent the proper execution of its work. Contractor shall not start any construction or any off-site fabrication of materials until the drawings dimensions are verified with actual field conditions. Do not scale drawings.

I. The contractor shall be held responsible for the results of any errors, discrepancies or omissions that the contractor failed to notify the architect of before construction and/or fabrication of the work.

J. Work includes demolition, removal and reinstallation where required. Remove, revise, relocate and reinstall as required.

K. It is not the responsibility of the architect or general contractor to insure that areas of the building, not described within the scope of this project, comply with current building codes. It is the responsibility of the owner to maintain the building, so as to provide for the safety and comfort of the occupants. This includes all life safety features such as fire alarm, fire-sprinklers, nurse call, exit enclosure, accessibility, etc.. This also includes maintaining the building free of hazardous materials i.e., chemicals as described by state or federal agencies as 'hazardous' including asbestos.

17. HAZARDOUS MATERIALS

A. The removal of hazardous materials is not intended to be included as part of this project unless specifically noted otherwise.

B. If hazardous materials are discovered during the course of construction, the contractor shall stop all affected work and notify the owner and architect immediately

14. COORDINATION OF DEVICES

A. Exact locations and heights of electrical, low voltage, mechanical and plumbing devices, including but not limited to smoke detectors, pull stations, switches, outlets, phone jacks, and thermostats, shall be coordinated by the contractor per the applicable code for alignment and coordination with each other and other building features prior to installation.

15. CONTRACTOR OBLIGATIONS

A. Contractor for the project shall be responsible for obtaining all required building permits prior to commencing work.

B. The contractor shall insure that all work is done in a professional work-man-like manner by skilled mechanics and shall replace any new and/or existing materials or items indicated to remain damaged by any cause during construction.

C. The contractor and/or subcontractor shall, prior to the submission of their bid or performance of work, notify the owner of any work called out on the drawings or in the specifications in their trade that cannot be fully guaranteed or warranted from defective workmanship or material defects.

D. The contractor shall notify the architect if details are considered unsound, unsafe, not waterproof, or not within customary trade practice. If work is performed, it will be assumed that there is no objections to the detail. Details are intended to show end result of design, minor modifications may be required to suit job conditions and current trade practice and shall be included as part of this project.

E. Contractor shall be responsible for all finishes at point of connections for all work (architectural, structural, mechanical and electrical) finishes will match those specified or existing in line, texture and finish. Spot painting is not acceptable. New finishes shall be from corner to corner, floor to ceiling, etc.

F. Unless otherwise noted, all materials shall be new and of good quality. Where existing materials are indicated to be salvaged, contractor shall inventory, clean,box protect, and store items for reuse on the project. Items not reused shall be returned to owner.

G. Coordination: the general and each sub-contractor shall be responsible for verification and coordination with other sub-contractors to assure compliance with drawings and specifications, and the accurate location of architectural, structural, mechanical and electrical building elements. Their required openings clearances support systems are all interconnected and coordinated.

H. Contractor shall be responsible for coordinating the work of all trades and for being aware of all conditions that affect their work. Notify owner, in writing, within 3 working days of award of contract, of the proposed delivery schedule, of any equipment, finishes or material, for which that schedule will prevent the installation from being completed at the time of the scheduled project completion.

I. Coordination of work:

- the contractor shall provide and coordinate the exact dimensions sizes and positions of all systems, equipment, mounting, and attachments relating to the work.
- the contractor shall provide and coordinate all dimensions sizes and positions of openings in slabs and walls necessary the installation of the work.
- all equipment, controls and terminations shall be positioned for safe, direct and easy access.

J. The contractor shall verify all dimensions and conditions of existing site. The contractor shall report to the architect all conditions which prevent the proper execution of its work. The drawings shall not be scaled.

K. Construction shall comply with applicable edition of California Building Code, all applicable local, state and federal codes, ordinances, laws, regulations and protective covenants governing the work. In case of conflicts, the more stringent requirement shall govern.

L. General contractor to arrange inspections as necessary or required.

M. All contractor's work shall be of the quality to pass inspections by local and state authorities, lending institutions, the architect and his engineers, inspector of record, and owner. Any one or all of the above mentioned inspectors may inspect trade(s) at any time, and any corrections needed to meet the required quality of construction shall be done immediately after notifying the architect and the owner for approval.

N. The contractor/sub contractors shall inspect the site prior to start of construction and notify owner and the architect of any existing conditions that may affect the work including elements that may be subject to damage during demolition and renovation. The contractor shall field verify existing dimensions, prior to start of construction and notify owner and architect of any discrepancies between the existing dimensions and the drawing dimensions that may affect the work. The contractor shall obtain direction from owner on resolution of the discrepancies between the existing conditions and dimensions and drawings prior to starting any work that may be affected by such discrepancies.

O. Cleanup: typically each subcontractor is held responsible for cleanup of the work of their trade by the general contractor. However, the general contractor shall be held solely responsible for continuous cleanup as the job progresses, and final cleanup upon substantial completion. The contractor shall be responsible for cleaning up and removing from the job site all trash and debris, immediately upon completion of his daily work. Continuous cleanup shall keep the job free at all times from unreasonable buildup of debris, wrappers, containers, waste materials, etc., which may cause accidents, undue hardship on the tradesman, and work progress. Final cleanup includes cleaning of all surfaces to a 'like new' condition and preparing the building for its intended use.

P. The contractor shall at all times maintain the site and adjacent areas in a clean, neat, and orderly manner. The contractor shall be responsible only for debris that is a result of the work, including any that may result from the workers. The contractor shall be responsible for providing his own refuse containers and shall at no time use the building refuse containers.

Q. The contractor shall be responsible for the complete security of the site while the job is in progress and until the job is completed.

R. Contractor shall provide a portable fire extinguisher with a rating of not less than 2-a or 2-10bc within 75 feet of travel distance to all portions of the build out area during construction.

S. Obtain all cal / OSHA construction activity permits, prior to obtaining the building permit, as required by and in accordance with applicable codes.

T. Demarcate and notify the regional notification center (Dig Alert, 811) at least two working days prior to making any excavations

U. Contractor will need to have the fire suppression inspected, and any necessary supplemental seismic bracing and stamped by a certified fire protection engineer per city fire department requirements.

V. Contractors scope of work for their sub-contractor to review and address any outstanding issues and or work items related to the structural and non structural works and tenant improvement and obtain approval from the city authority for that work.

8. EXITS

A. Exit doors shall be of the pivoted or side-hinged swinging type. Exit doors shall swing in the direction of exit travel when the area served has an occupant load of 50 or more.

B. Every exit door shall be openable from the inside without the use of a key or any special knowledge or effort. Note also that flush bolts or surface bolts are prohibited.

C. Panic hardware shall be provided on exit doors of rooms, corridors, stairways, handling an occupant capacity of 50 or more persons.

D. Exit signs shall be installed at required exit doorways and where otherwise necessary to clearly indicate the direction of egress in compliance with the code of jurisdiction.

F. Egress doors shall be set in motion when subjected to a 30lb. force. The door shall swing to the fully open position when an opening force not exceeding 15 lbs is applied to the latch side.

G. Each door in a means of egress from a group 'a' occupancy shall not be provided with a latch or lock unless it is panic hardware or fire exit hardware (CBC 1010.1.9).

H. Door handles, lock and other operating devices shall be installed at a min. 34" and a max. 48" a.F.F.

I. Exit signs shall be connected to an emergency power system that will provide an illumination of not less that 90min. in case of primary power loss (CBC 1013.6.3)

J. The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.

9. FIREPROOFING

A. Fire protection of structural members shall be in compliance with state regulations.

B. Steel fireproofing thickness shall be in compliance with the current edition of the CBC .

C. Periodic inspections shall be provided for all required sprayed-on fireproofing to the requirements of CBC Chapter 17a Special Inspections and Tests. The inspector shall submit a signed affidavit that all sprayed-on fireproofing, where required, is applied according to code and manufacturer's specifications.

10. RATED ASSEMBLY PENETRATIONS

A. Mechanical ducts, etc. Penetrating fire-rated ceilings and fire walls shall be correspondingly rated or dampered. Cabinets, electrical panels, lights, etc. Recessed into fire rated walls or ceilings shall be backed with corresponding fire-resistive construction as required to maintain the integrity of the fire protection.

B. Fire resistive assemblies for protection of openings shall comply with CBC.Penetration of fire rated assemblies which require opening protection shall be fire stopped. Fire stopping shall be identical to an approved underwriters laboratories (UL) listed assembly with an "f" of "t" rating. Penetrations must also consist of approved materials for through wall penetrations fire stop systems as prescribed in CBC standard 7-5 fire rating for fire stop systems shall be equal to the assembly penetrated.

11. DISSIMILAR METALS

A. All dissimilar metals shall be effectively isolated.

12. ELECTRICAL BACKBOARDS

A. Refer to electrical, telephone/data and security electronics drawings for location of and specifications for the installation of fire retardant treated plywood backboards required in electrical and communication rooms. These required plywood backboards have not been shown on the architectural drawings, but must be furnished and installed as a part of the overall contract. Backboards shall be painted white.

13. SIGNAGE

A. Furnish and install supports and other necessary finish materials for a complete signage installation.

B. Accessible signage / identification

1. The international symbol of accessibility shall be the standard used to identify facilities that are accessible to and useable by physically disabled persons.

2. Letters and numbers on signs have a width to height ratio of between 3:5 and 1:1 and stroke width to height ratio of between 1:5 and 1:10.

3. Characters and symbols shall contrast with their background, either light characters on a dark background or dark characters on a light background.

4. All building entrances that are accessible to and usable by physically handicapped persons shall be identified with at least one standard sign and with additional directional signs as required to be visible to persons along approaching pedestrian ways.

5. All sanitary facilities will be provided with appropriate identification symbols.

C. Area and occupancy signage requirements occupant load sign shall be posted in each classroom, assembly room or similar purpose room having an occupant load of 50 or more.

1. GENERAL

A. All work shall conform to contract documents. No changes therefrom shall be made without written approval of the architect. Where more information or when an interpretation of the contract documents is needed, the contractor before proceeding with work, shall refer the matter to the architect who will furnish information or interpretation in the form of supplemental information or other written form or drawing.

B. Where only part of the work is indicated, similar parts shall be considered repetitions. Where any detail is shown and the components are described elsewhere, similar details shall be constructed as described in the original details.

C. Drawings are generic in nature. Contractor shall fully coordinate all aspects of the work to be performed. Details are not intended to show method and manner of accomplishing the work.

D. All dimensions originating at, connected to, or continuing through existing conditions, including previous phases, must be coordinated and field verified by the contractor prior to fabrication installation, and construction of building elements or systems.

E. Verify all dimensions, elevations, and all existing conditions at the site before commencing work and report any discrepancies to the architect and owner.

F. Should a conflict be discovered within the contract documents, the contractor shall be deemed to have included in his work the highest quality way of doing the work unless he shall have asked for and obtained a decision in writing from the architect and owner.

2. CODES

A. All construction is to comply with the applicable codes as adapted by the regional, state, and national authorities having jurisdiction.

B. For list of codes applicable to this project, see 'applicable codes' on cover sheet.

3. PERMITS

A. The contractor shall procure all permits, and licenses required for the completion of the work. The cost of these notices, permits, and licenses is incidental to other items of work and no additional payment will be made for costs incurred in obtaining notices, permits, and licenses or in conforming to the requirements thereof.

4. COORDINATION & VERIFICATION

A. The drawings are divided into separate sheets and the project manual into separate sections for general convenience only. Sheet designation or numbers shall not be considered to limit areas of the work or responsibility of trades. Coordinate the work shown on the drawings and in the project manual in order to complete the project as designed.

B. Verify all sizes of and prepare work for equipment of others and coordinate work on this contract with items of work not in contract (N.I.C.) or work furnished by others.

C. Locations and sizes of equipment are based on available information. Provide and coordinate the exact dimensions, sizes, and positions.

D. Provide and coordinate the exact dimensions, sizes and positions of openings in slabs and walls necessary for the installation of the work.

E. Provide reinforcing steel, mesh, and dowels required by the structural general notes and drawings for architectural details indicated on the architectural drawings.

F. Quantities indicated on the drawings are approximate. Contractor shall verify quantities and include accurate quantities as part of the work.

G. Notes and details: specific notes or keynotes on details apply to similar conditions on other details on all drawings unless specifically noted otherwise.

5. UTILITIES AND DEMOLITION

A. The drawings show diagrammatically the approximate location of underground utilities where information is available, but the drawings are not exact as to the quantity, extent or location.

B. Prepare surfaces of floor areas which have finishes demolished to receive new finish material as specified.

C. For additional demolition requirements, see specifications.

6. DIMENSIONS

A. Overall dimensions are to face of finish, and/or nominal face of masonry unless noted otherwise.

B. Elevations and vertical dimensions are to top of finish floor material. Thickness of all floor finish material must be fully coordinated.

C. Grid line to center of column.

D. Dimension to center of column & grid line.

E. Exterior dimensions are from face to face of concrete stem walls.

F. Interior dimensions are from finish to finish.

G. Do not scale drawings.

7. FIRE PROTECTION

A. The contractor shall provide portable fire extinguishers as required by code, and authority having jurisdiction, at all portions of the building on each floor. These extinguishers shall be installed in the locations approved by the fire department and the architect.

B. Where testing laboratory design numbers are listed for fire rated construction, the components and installation details must conform with the design number specified.

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP

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STAMP

STAMP

ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

G-002

SHEET NO. OF

CLEAR FLOOR SPACE FOR WHEELCHAIRS

1. Minimum clear floor or ground space required to accommodate a single, stationary wheelchair and occupant is 30" x 48". Minimum clear floor or ground space for wheelchairs may be positioned for forward or parallel approach to an object. Floor or ground space for wheelchairs may be part of the knee space required under some objects.
2. Provide an additional 12" width on one side for alcoves greater than 15" deep and designed for side approach.
3. Provide additional 6" width on one side for alcoves greater than 24" deep and designed for front approach.

HAZARDS AND PROTRUDING OBJECTS

1. Objects projecting from walls with their leading edges between 27" and 80" above the finished floor shall protrude no more than 4" into walks, halls, corridors, passageways or aisles.
2. Objects mounted with their leading edges at or below 27" above the finished floor may protrude any amount.
3. Free standing objects mounted on posts or pylons may overhang 12" maximum from 27" to 80" above the ground or finished floor.
4. Protruding objects shall not reduce the required clear width of an accessible route or maneuvering space.
5. Any obstruction overhanging a pedestrian way shall be a minimum of 80" above the walking surface as measured to the bottom of the obstruction.

WALKS AND SIDEWALKS

1. Walks and Sidewalks shall have a continuous common surface not interrupted by steps or by abrupt changes in level which exceed 1/2", and shall be a minimum of 48" width.
2. Surface cross slope shall not exceed 1/4 inch per foot.

   Walks, sidewalks, and pedestrian ways shall be free of grating whenever possible. Grid openings within gratings located in the surface of any of these areas shall be limited to 1/2" in the direction of the traffic flow.

   When the slope in the direction of travel of any walk exceeds 1 vertical to 20 horizontal, it shall comply with the provisions of pedestrian ramps.

ENTRANCES / DOORS

1. All primary entrances and exterior ground floor exit doors to buildings and facilities shall be made accessible to the physically disabled
2. All accessible entrances shall be identified with at least (1) standard sign and with additional directional signs, as required, visible from approaching pedestrian ways.
3. Every required entrance or passage doorway shall be of a size as to permit the installation of a door not less than 36" in width, and not less than 80" in ht. Doors shall be capable of opening at least 90 degrees and shall be mounted so that the clear width of the doorway is not less than 32". Latching and locking doors that are hand activated and which are in a path of travel, shall be operable with a single effort by lever type hardware, panic bars, push - pull.
4. Activating bars, or other hardware designed to provide passage without requiring the ability to grasp the opening hardware. Lever hand activated door opening shall be centered between 30" and 44" maximum above the floor.
5. The floor or landing length on each side of an entrance or passage door shall be level and clear at least 60" in the direction of the door swing, and at least 48".
6. Opposite the direction of the door swing as measured at right angles to the face of the door in the closed position. The side of the level and clear area on the side which the door swings shall extend a minimum of 18" (24" at exterior doors) past the strike edge of the door for doors with front approach, 24" for doors requiring latch side approach, and 36" for doors with hinge side approach. Refer to detail no. 3 on this drawing for additional clearance requirements
7. The floor or landing shall not be more than 1/2" lower than the threshold of the doorway. Changes in level between 1/4" and 1/2" shall be leveled with a slope not greater than 1:2.
8. The bottom 10" of all doors (except automatic and sliding) shall have a smooth uninterrupted surface to allow the door to be opened by a wheelchair foot rest without creating a trap or hazardous condition. Where narrow frame doors are used, a 10 inch high smooth panel shall be installed on the push side of the door, which will allow the door to be opened by a wheelchair footrest.
9. Maximum effort to operate doors shall not exceed 5 pounds for exterior doors and 5 pounds for interior doors. Such pull or push effort being applied at right angles to hinged doors and at the center plane of sliding or folding doors. Compensating devices or automatic door operators may be increased to the minimum allowable by the appropriate administrative authority, not to exceed 15 pounds. CBC section 1133b. 2. 5
10. All hand - activated door opening hardware shall meet the following requirements:
    A. Shall be centered between 30" and 44" above the floor
    B. Latching and locking doors shall be operated with a single effort by lever type hardware, panic bars, push - pull activating bars or other hardware designed to provide passage without the ability to grasp.
11. Thresholds shall not exceed 1/2" in height.
12. The tenant space, a primary entrance to the building, the primary path of travel from the entrance to the tenant space and the sanitary facilities, drinking fountains and public telephones serving the tenant space must be accessible to the handicapped.
13. Food service aisles shall be 36" minimum clear width with a preferred width of 42" where passage around stopped wheelchairs by others is desired.
14. Entrance (s) to the building or facility and the primary path of travel to the specific area of new work, alteration, structural repair or addition shall be accessible. Path - of - travel incorporated all elements from the exterior arrival site to the remodeled area. Section 1114b.1.2 and 1114b.1.3.

EXIT / MEANS OF EGRESS notes

1. a. Exit signs shall be internally or externally illuminated.
   b. Internally illuminated exit signs shall be listed and labeled and shall be installed in accordance with manufacturer's instructions and section 2702.
   c. Externally illuminated exit signs shall comply with the graphics and power source requirements in sections 1011. 5. 1 and 1011. 5. 3 , respectively. When the face of an exit sign is illuminated from an external source, it shall have an intensity of not less than 5 - foot - candles (54 lux) (1011. 2) exit signs shall be located so that they are clearly visible.
2. Exit signs shall be illuminated at all times. (1011.3)
3. Any time a building or a portion of a building is occupied, the means of egress serving the occupied portion shall be illuminated at an intensity of not less than 1 - foot - candle (54 lux) at the walking surface level.
4. The power supply for means of egress illumination shall be provided by the premise's electrical supply. In the event of power supply failure, illumination shall be automatically provided from an emergency system for aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress.
5. The EXIT sign shall also be connected to an emergency electrical system which is to provide continued illumination for a duration of not less than 1 1/2 hours in case of primary power loss. Continued illumination is to be provided from storage batteries, unit equipment, or an on - site generator and the installation of the emergency power system shall be installed in accordance with Chapter 27. (1006. 3)
6. Emergency lighting facilities shall be arranged to provide initial illumination that is at least an average of 1 - foot - candle (11 lux) and a minimum at any point of 0.1 foot - candle (1 lux) measured along the path of egress at floor level. A maximum - to - minimum illumination uniformity ratio of 40 to 1 shall not be exceeded. (1006. 4)
7. Exit signs shall be connected to an emergency power system that will provide an illumination of not less than 90 min. In case of primary power loss (1011.6.3).
8. Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort. See 1008.1.9 for exceptions.
9. Door handles, lock and other operating devices shall be installed at a minimum 34" and a maximum 48" above finished floor.
10. This door to remain unlocked when building is occupied.
11. All egress door operation shall also comply with section 1008.1.9 - 1008.1.9.12.
12. The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.

RAMPS

1. All ramps used as exits and any path of travel having a slope greater than 1:20 shall comply with the requirements of this section. Ramps shall have the least possible slope.
2. Pedestrian ramps serving primary entrances to a building shall have a minimum width of 48". Ramps serving an occupancy load greater than 300 shall have a minimum width of 60".
3. All ramps in areas accessible to persons with disabilities on a path of travel or serving exits shall have a 1:12 maximum slope with cross slopes no greater than 1:50.
4. The level landing width of any ramp shall extend past the strike edge of any door or gate as shown on detail no. 3 on this drawing.
5. Doors in any position shall not reduce the minimum dimension of the ramp landing to less than 42", and shall not reduce the required width by more than 3", when fully open.

SANITARY FACILITIES (GENERAL)

1. All doorways leading to sanitary facilities shall have clear unobstructed openings of 32" minimum.
2. All sinks, faucet controls, and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls shall be no greater than 5 lbs, lever operated, push type, and electronically controlled mechanisms are examples of acceptable designs. Self closing valves are allowed if the faucet remains open for at least 10 seconds.
3. Lavatories shall be mounted with a minimum distance of 18" from a wall or partition to the center of the fixture. Accessible lavatories shall be mounted with the rim or counter surface no higher than 34" above the floor.
4. Switches for control of lights, ventilation, fire alarms, etc. Shall be installed minimum 36" and maximum 48" above the finished floor. Electrical outlets shall be installed not less than 15" above the finished floor.

TOILET ROOM FIXTURES AND ACCESSORIES

1. The height of accessible water closets shall be a minimum of 17" and a maximum of 19" measured to the top of the toilet seat.
2. Provide 18" from the centerline of the water closet to the adjacent wall.
3. Toilet and urinal flush controls shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. Controls for the flush valves valves shall be mounted on the open (wide) side of the toilet stall, no more than 44" above the floor. The force required to activate controls shall be no greater than 5 lbs.
4. Where urinals are provided, at least one shall have a clear space 30" wide by 48" long in front of the urinal. At least one urinal with a rim projecting a minimum of 14" from the wall and a maximum of 17" above the floor shall be installed.
5. A clear floor space 30" wide by 48" long shall be provided in front of a lavatory to allow forward approach. Such clear space shall adjoin or overlap an accessible route and shall extend into knee and toe space underneath lavatory. See detail no. 6 on this drawing.
6. Lavatories shall be mounted with a clearance of at least 29" from the floor to the bottom of the apron with knee clearance under the front lip extending a minimum of 30" in width with 8" minimum depth at the top. Toe clearance shall be same width and minimum of 9" high from the floor and a minimum of 17" deep from the front of the lavatory.
7. Hot water and drain pipes under lavatories shall be insulated or otherwise covered. There shall be no sharp or abrasive surfaces under lavatories.
8. Mirrors shall be mounted with bottom edge of the reflective surface not more than 40" from the floor.
9. Locate paper towel dispensers, sanitary napkin dispensers and waste receptacles with all operable parts not more than 40" from the floor.
10. Locate toilet tissue dispensers on the wall within 12" of the front edge of toilet seat. Dispensers that control delivery or that do not permit continuous paper flow shall not be used.

MULTIPLE ACCOMMODATION TOILET FACILITIES

1. A clear space measured from the floor to a height of 27" above the floor, within the sanitary facility room, of sufficient size to inscribe a circle of a diameter not less than 60", or a clear space not less than 56" x 63" in size shall be provided. Doors other than the door to the disabled toilet compartment, in any position, may encroach into this space by not more than 12".
2. An accessible individual toilet stall shall provide at least 28" clear space from a fixture or 32" clear space from a wall at one side of the water closet. A 48" long clear space in front of water closet shall be provided if the compartment has an end opening door (facing the water closet). A 60" long clear space shall be provided when door is located at the side of compartment. Grab bars shall not project more than 3" into clear space specified above.
3. Water closet compartment shall be equipped with a door that has an automatic closing device, and shall provide a clear unobstructed opening width of 32" when located at the end, and 34" when located at the side (measured when when the door is positioned at an angle of 90 degrees from its closed position)
4. Toilet partitions for the accessible toilet shale be provided with a latch that does not require grasp of twisting, and a u-shape or loop immediately below the latch on the inside and outside of the partition door. CBC 1115b. 3. 1. 4. 5.
5. Except for door openings, a clear unobstructed access not less than 44" shall be provided to all water closet compartments designed for use by the disabled. The space immediately in front of a water closet compartment shall be not less than 48" as measured at right angles to the compartment door in its closed position.

GRAB BARS

1. Grab bars shall be located on one side and the back of the physically disabled toilet stall or compartment and shall be securely attached 33" above and parallel to the floor.
2. Grab bars at the side shall be minimum 42" long with the front end positioned 24" from front of the water closet. Grab bars at the back shall not be less than 36".
3. The diameter or width of the gripping surfaces of a grab bar shall be between 1 1/4" and 1 1/2" or the shape shall provide an equivalent gripping surface. If the grab bars are mounted adjacent to a wall. The space between the wall and the grab bars shall be 1 1/2".
4. Grab bars, and any wall or other surface adjacent to it, shall be free of any sharp or abrasive elements. Grab bar edges shall have a minimum radius of 1/8".
5. Grab bars shall not rotate within their fittings.
6. Grab bars shall be designed to support a 250 pound force.

SIGNAGE

1. Braille symbols. Contracted grade 2 braille shall be used used wherever braille symbols are specifically required. Dots shall be 1/10 inch on center in each cell with 2/10 inch space between cells. Dots shall be raised a minimum of 1/40 inch above the background.
2. Proportions. Letters and numbers on signs shall have a width - to - height ratio of between 3:5 and 1:1 and a stroke width - to - height ratio of between 1:5 and 1:10.
3. Character height. Characters and numbers on signs shall be sized according to the viewing distance from which they are to be read, the minimum height is measured using an uppercase 'x'. Lowercase characters are permitted. For signs suspended or projected above the finish floor the minimum character height shall be 3".
4. Contrast of symbol. Characters and symbols shall contrast with their background, either light characters on a dark background or dark characters on a light background.
5. Raised characters and pictorial symbol signs. When raised characters or symbols are used, they shall conform to the following:
   a. Letter type. Letters and numbers on signs shall be raised 1/32 inch minimum and shall be sans - serif uppercase characters accompanied by grade 2 braille.
   b. Symbol size. Raised characters or symbols shall be a minimum of 5/8 inch high.
   c. Pictorial symbol signs (pictograms). Pictorial symbol signs (pictograms) shall be accompanied by the equivalent verbal description placed directly below the pictogram. The border dimension of the pictogram shall be a minimum of 6" in height.
6. Mounting location and height. Where permanent identification is provided for rooms and spaces, raised letters shall be provided and shall be accompanied by braille. Signs shall be installed on the wall adjacent to the latch outside of the door. Where there is no wall space on the latch side, including at double leaf doors, signs shall be placed on the nearest adjacent wall, preferably on the right. Mounting height shall be 60" above the finish floor to the center line of the sign. Mounting location shall be determined so that a person may approach within 3 inches of signage without encountering protruding objects or standing within the swing of a door.

SEATING

1. If seating spaces for person in wheelchairs are provided at fixed tables or counters, clear floor space complying with section 1118b.4 shall be provided. Such clear floor space shall not overlap knee and 19" deep shall be provided section 1122b.2 .

KNEE CLEARANCE

1. If seating for person in wheelchairs are provided at fixed tables or counters, knee space at least 27" height, 30" wide and 19" deep shall be provided section 1122b.3.

HEIGHT OF WORK SURFACES

1. The tops of tables and counters shall be 28" to 34" from the floor ground. Section 1122b.4 .

REACH REQUIREMENTS

1. Public cashier counters shall be 34" in height.
2. Relationship of maneuvering clearances to wheelchair spaces. One full unobstructed side of the clear floor or ground space for a wheelchair shall adjoin another wheelchair clear floor space. If a clear floor space is located in an alcove or otherwise confined all or part of three sides, additional maneuvering clearances shall be provided.
3. Forward reach. If the clear floor space allows only forward approach to an object, the maximum high forward reach allowed shall be 48". The minimum low forward reach is 15".
4. Side reach. If the clear floor space allows parallel approach by a person in a wheelchair, the maximum high side reach allowed shall be 54" and the low side reach shall be no less than 9" above the floor.
5. The operating part of all accessories shall be installed at 40' maximum to the centerline of the operating part from finished floor surface. CBC 1115b. 8. 3

ELECTRICAL NOTES

1. Controls and switches intended to be used by the occupant of the room or area to control lighting and receptacle outlets, appliances, or cooling, heating, and ventilating equipment, shall be located no more than 48" measured from the top of the outlet box nor less than 15" measured from the bottom of the outlet box to the level of the finish floor or working platform. (1117b. 6. 5. 1)
2. Electrical receptacle outlets on branch circuits of 30 amperes or less and communication system receptacles shall be located no more than 48" measured from the top of the receptacle outlet box or receptacle housing nor less than 15" measured from the bottom of the receptacle outlet box or receptacle housing to the level of the finish floor or working platform. (1117b. 6. 5. 2)
3. The power supply for means of egress illumination shall be provided by the premise's electrical supply. In the event of power supply failure, illumination shall be automatically provided from an emergency system for aisles and unenclosed egress stairways in rooms and spaces that require two or more means of egress.

NOTIFICATION APPLIANCES FOR THE HEARING IMPAIRED

1. If emergency warning systems are provided, they shall include both audible alarms and visual alarms complying with NFPA 72 and Chapter 9, Sections 907. 5. 2. 1 and 907. 5. 2. 3. (1114B. 2. 2)

ENTRANCES AND EXITS

Exit as defined is "that portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protective's as required to provide a protected path of egress travel between the exit access and the exit discharge. Exits include exterior exit doors at ground level, exit enclosures, exit passageways, exterior exit stairs, exterior exit ramps and horizontal exits." (1002.1).

Public way as defined is "a street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet. (1002.1).

1. All entrances and exterior ground floor exit doors to buildings and facilities shall be made accessible to persons with disabilities. (1133b.1.1.1.1).
2. Revolving doors shall not be used as a required entrance for persons with disabilities. (1133b.2.3.3).
3. During periods of partial or restricted use of a building or facility, the entrances used for primary access shall be accessible to and usable by persons with disabilities. (1133b.1.1.1.2).
4. Recessed doormats shall be adequately anchored to prevent interference with wheelchair traffic. (1133b.1.1.1.3, fig. 11b-25).
5. All gates, including ticket gates, shall meet all applicable accessibility specifications of doors. (1133b.1.1.1.4).
6. Every required exit doorway shall be capable of opening at least 90 degrees, shall have a minimum clear opening of 32", and shall be of a size as to permit the installation of a door not less than 3 feet in width and not less than 6'-8" in height. (1133b.2.2).
7. The space between two consecutive door openings in a vestibule, serving other than a required exit stairway, shall provide a minimum of 48" of clear space from any door opening into such vestibule when the door is positioned at an angle of 90 degrees from its closed position. Doors in a series shall swing either in the same direction or away from the space between the doors. See figures 11b-30 & 11b-31. (1133b.2.4.4).

DOORS

1. Door handles, pulls, latches, locks and other operating devices on doors required to be accessible shall not require tight grasping, tight pinching or twisting of the wrist to operate. Manually operated bolts or surface bolts are not permitted. The unlatching of any door or leaf shall not require more than one operation. (1008).
2. Latching and locking doors that are hand activated and which are in a path of travel shall be operable with a single effort by lever type hardware, by panic bars, push-pull activating bars, or other hardware designed to provide passage without requiring the ability to grasp the opening hardware. (1133b.2.5.2).
3. Hand-activated door opening hardware shall be centered between 30" and 44" above the floor. (1133b.2.5.2).
4. When installed, doorways shall have a minimum clear opening of 32" with the door open 90 degrees. (1133b.1.1.1.1, fig 11b -5b & 11b-33).
5. For hinged doors, the opening width shall be measured with the door positioned at an angle of 90 degrees from its closed position. (1133b.2.3, fig 11b-5b).
6. Where a pair of doors is utilized, at least one of the doors shall provide a clear, unobstructed opening width of 32" with the leaf positioned at an angle of 90 degrees from its closed position. (1133b.2.3.1).
7. When an automatic or power assisted door operator is utilized to operate a pair of doors, at least one of the doors shall provide a clear, unobstructed opening width of 32" with the door positioned at an angle of 90 degrees from its closed position. Automatic doors shall comply with BHMA a156.10 or BHMA a156.19. (1133b.2.3.2).
8. Minimum maneuvering clearances at doors shall be as shown in figure 11b-26a & 11b-26b. The floor or ground area within the required clearances shall be level and clear. (1133b.2.4.2).
9. There shall be a level and clear floor or landing on each side of a door. The level area shall have a length in the direction of door swing of at least 60" and the length opposite the direction of door swing of 48" as measured at right angles to the plane of the door in the closed position. Where the plane of the doorway is offset or located in an alcove a distance more than 8" measured from the plane of the doorway to the face of the wall, the door shall be provided with 60" maneuvering clearance for front approach. (1133b.2.4.2, 1133b.2.5.3, fig. 11b-26, fig. 11b-33a).
10. The width of the level area on the side to which the door swings shall extend 24" past the strike edge of the door for exterior doors and 18" past the strike edge for interior doors. Where the plane of the doorway is offset 8 or more" from any obstruction within 18" measured laterally on the latch side, the door shall be provided with maneuvering clearance for front approach. (1133b.2.4.3, 1133b.2.4.5, 1133b.2.5.3, fig. 11b-33(a)).
11. Provide clear space of 12" past strike edge of the door on the opposite side to which the door swings if the door is equipped with both a latch and a closer. (fig 11b-26 (a)).
12. The floor or landing shall be not more than ½ inch lower than the threshold of the doorway. (1133b.2.4.1).
13. The bottom 10" of all doors except automatic and sliding shall have a smooth, uninterrupted surface to allow the door to be opened by a wheelchair footrest without creating a trap or hazardous condition. Where narrow frame doors are used, a 10" high smooth panel shall be installed on the push side of the door, which will allow the door to be opened by a wheelchair footrest without creating a trap or hazardous condition. (1133b.2.6, fig 11b-29).
14. Maximum effort to operate exterior and interior doors shall not exceed 5 pounds, with such pull or push effort being applied at right angles to hinged doors and at the center plane of sliding or folding doors. Compensating devices or automatic door operators may be utilized to meet the above standards. When fire doors are required, the maximum effort to operate the door may be increased to the minimum allowable by the appropriate administrative authority, not to exceed 15 lbf. (1133b.2.5).
15. When the door has a closer, then the sweep period of the closer shall be adjusted so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3" from the latch, measured to the landing edge of the door. (1133b.2.5.1).
16. Where turnstiles and crowd control barriers are utilized in a facility for the purpose of providing fully controlled access, such as where an admission price is charged, a door or gate that is accessible to persons with disabilities shall be provided adjacent to each turnstile exit or entrance. This alternate passageway shall be maintained in an unlocked condition during business hours and the door or gate shall not activate a publicly audible alarm system. The door or gate may be latched where all gates are restricted and controlled by an attendant and a sign is posted stating, "all gates are restricted and controlled by an attendant." the accessible door or gate shall provide the same use pattern. Where posts, rails, or other pedestrian controls are utilized to create crowd control aisles or lanes, a minimum aisle width not less than indicated in figure 11b-5e (a) and (b) with 32" of clear opening. (1133b.2.3.4).

FLOORS AND LEVELS

Level area is defined as "a specified surface that does not have a slope in any direction exceeding 1/4 inch in one foot from the horizontal (2.083% gradient)." (1102b).

1. In buildings and facilities, floors of a given story shall be a common level throughout, or shall be connected by pedestrian ramps, passenger elevators, or special access lifts. (1102b.1).
2. Ground and floor surfaces along accessible routes and in accessible rooms and spaces, including floors, walks, ramps, stairs, and curb ramps, shall be stable, firm, and slip-resistant. (1120b.2 & 1124b.1).
3. Changes in level up to 1/4" may be vertical and without edge treatment. (1124b.2, fig . 11b-5e (c)).
4. Changes in level between 1/4" inch and 1/2" shall be beveled with a slope no steeper that 1:2. (1124b.2, fig 11b-5e (d)).
5. If carpet or carpet tile is used on a ground or floor surface, it shall be securely attached; have a firm cushion, pad or backing or no cushion or pad; and have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. The maximum pile height shall be 1/2" exposed edges of carpet shall be fastened to floor surfaces and have trim along the entire length of the exposed edge. Carpet edge trim shall comply with section 1124b.2. (1124b.3, fig. 11b-7e).
6. F gratings are located on floors, then they shall have spaces no greater than 1/2" wide in one direction. If gratings have elongated openings, they shall be placed so that the long dimension is perpendicular to the dominant direction of travel. (1124b.4, fig 11b-7e).

CORRIDORS AND AISLES

1. Every corridor and hallway serving an occupant load of 10 or more shall not be less than 44" in width. (1133b.3.1).
2. Corridors and hallways serving an occupant load of less than 10 shall not be less than 36" in width. (1133b.3.1).
3. Corridors which are located on accessible route and exceed 200 feet in length shall: (1133b.3.2, fig 11b-34).
   a. Have a minimum clear width of 60" ; or
   b. Have, at reasonable intervals, a 60" by 60" minimum wheelchair turning space or passing alcove; not to exceed 200 feet; or
   c. Have, at a central location, an intervening crossing or tee corridor, a minimum of 44" in width.
4. Circulation aisles and pedestrian ways shall be sized according to functional requirements and in no case shall be less than 36" in clear width. (1105b.3.6).
5. Every portion of every building in which are installed seats, tables, merchandise, equipment, or similar materials shall be provided with aisles leading to an exit. (1133b.6.1).
6. Every aisle shall be not less than 36" wide if serving only one side, and not less than 44" wide if serving both sides. (1133b.6.2).

HAZARDS AND PROTRUDING OBJECTS

1. Abrupt changes in level, except between a walk or sidewalk and an adjacent street or driveway, exceeding 4" in a vertical dimension, such as at planters or fountains located in or adjacent to walks, sidewalks, or other pedestrian ways, shall be identified by warning curbs projecting at least 6" in height above the walk or sidewalk surface to warn the blind of a potential drop off. (1133b.8.1).
2. When a guard or handrail is provided, no curb is required when a guide rail is provided centered 3" plus or minus 1 inch above the surface of the walk or sidewalk, the walk is 5 percent or less gradient or no adjacent hazard exists. (1133b.8.1, fig. 11b-27 (c)).
3. Objects projecting from walls with their leading edges between 27" and 80" above the finished floor shall protrude no more than 4" into walks, halls, corridors, passageways, or aisles. (1133b.8.6.1, fig 11b-7a).
4. Objects mounted with their leading edges at or below 27" above the finished floor may protrude any amount into walks, halls, corridors, passageways, or aisles. (1133b.8.6.1, fig 11b-7a).
5. Free - standing objects mounted on posts or pylons may overhang 12" maximum from 27" to 80" above the ground or finished floor. (1133b.8.6.1, fig. 11b-7b).
6. Protruding objects shall not reduce the clear width of an accessible route or maneuvering space. (1133b.8.6.1, fig 11b-7d).
7. Walks, halls, corridors, passageways, aisles, or other circulation spaces shall have 80" minimum clear head room. (1133b.8.6.2, fig. 11b-7a & 7c).
8. Any obstruction that overhangs a pedestrian way shall be a minimum of 80" above the walking surface as measured from the bottom of the obstruction. (1133b.8.2, fig. 11b-28).
9. Where a guy support is used parallel to a path of travel, including, but not limited to sidewalks, a guy brace, sidewalk guy or similar device shall be used to prevent an overhanging obstruction as defined. (1133b.8.2).
10. If a walk crosses or adjoins a vehicular way, and the walking surfaces are not separated by curbs, railings, or other elements between the pedestrian areas and vehicular areas, the boundary between the areas shall be defined by a continuous detectable warning which is 36" wide, complying with section 1121b.3.1, item 8(b) . (1133b.8.5).
11. Transit boarding platforms shall conform to the requirements of section 1121b.3.1, item 8(b) . Only approved dsa/ac detectable warning products and directional surfaces shall be installed as provided in the California code of regulations, title 24, part 1, articles 2, 3, and 4. (1133b.8.4 &1133b.8.5).

CONTROLS AND OPERATING MECHANISMS

1. Controls and operating mechanisms in accessible spaces, along accessible routes or as part of accessible elements and those in section 109.1 are required to be accessible. (1117b.6.1).
2. Clear floor space complying with section 1118b.4 that allows a forward or parallel approach by a person using a wheelchair shall be provided at controls, dispensers, receptacles, and other operable equipment. (1117b.6.2).
3. The highest and lowest operable part of all controls, dispensers, receptacles, and other operable equipment shall be placed within one of the reach ranges specified in sections 1118b.5 and 1118b.6. Electrical and communication system receptacles on walls shall be mounted no less than 15" above the floor. (1117b.6.3).
4. Controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, punching, or twisting of the wrist. To force required to activate controls shall be no greater than 5 pounds of force. (1117b.6.4).
5. For accessible lavatories, faucet controls and operating mechanisms shall be operable with one hand and shall not require grasping, pinching, or twisting of the wrist. The force required to active faucet controls and operating mechanisms shall be no greater than 5 lbf. Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs. Self-closing valves are allowed if the faucet remains open for at least 10 seconds. (1115b.4.3).

SPACE ALLOWANCE AND REACH RANGES

1. The minimum clear floor or ground space required to accommodate a single, stationary wheelchair and occupant is 30" by 48". The minimum clear floor or ground space for wheelchairs may be positioned for forward or parallel approach to an object. Clear floor or ground space for wheelchairs may be a part of the knee space required under some objects. (1117b.2.3, 1118b.4.1, fig 11-b-5a).
2. One full unobstructed side of the clear floor or ground space for a wheelchair shall adjoin or overlap an accessible route or adjoin another wheelchair clear floor space. If a clear floor or ground space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearances shall be provided. (1117b.2.4, 1118b.4.2, fig. 11-b-5a).
3. The space required for a wheelchair to make a 180 degree turn is a clear space of 60" diameter or a t-shaped space. (1118b.3, fig. 11b-12 (a) & (b)).
4. The minimum clear width required for a wheelchair to turn around an obstruction shall be 36" where the obstruction is 48" or more in length and 42" and 48" where the obstruction is less than 48" in length. (fig. 11b-5e).
5. The minimum clear width for single wheelchair passage shall be 32" at a point and 36" continuously. (1118b.1, fig. 11b-10).
6. The minimum width for two wheelchairs to pass is 60". (1118b.2, fig 11b-11).
7. If the clear floor space only allows forward approach to an object, the maximum high forward reach allowed shall be 48". See figure 11b-5c (a) . The minimum low forward reach is 15". If the high forward reach is over an obstruction, reach and clearances shall be as shown in figure 11b-5c (b) . (1118b.5).
8. If the clear floor space allows parallel approach by a person in a wheelchair, the maximum high side reach allowed shall be 54" and the low side reach shall be no less than 9" above the floor as shown in figure 11b-5d (a) . If the side reach is over and obstruction, the reach and clearances shall be as shown in figure 11b-5d (c) . (1118b.6).

EMPLOYEE WORK AREAS AND WORKSTATIONS

Work station is defined as "an area defined by equipment and / or work surfaces intended for use by employees only, generally for one or a small number of employees at a time..." (1102b).

1. Employee areas shall conform to all requirements of the division of the state architect - access compliance in the california building code, plumbing code, and electrical code. (1123b.1).
2. Specific workstations need only comply with aisle width and floors and levels, and entry-ways shall be 32" in clear width. Aisles shall not be less than 36" if serving only one side, and not less than 44" wide if serving both sides. (1133b.2,1133b.6.2).
3. Employee work areas shall be accessible by means of 36 inch minimum aisle and 32 inch minimum clear opening door width. (1105b.3.2.3).

FIXED OR BUILT - IN SEATING, TABLES AND COUNTERS

1. Where fixed or built-in seating, tables, or counters are provided for the public, and in general employee areas, five percent but never less than one must be accessible, as required in section 1122b. (1122b.1).
2. If seating spaces for persons in wheelchairs are provided at fixed tables or counters, clear floor space complying with section 1118b.4 shall be provided. Such clear floor space shall not overlap knee space by more than 19". (1122b.2, fig 11b-13).
3. If seating for persons in wheelchairs is provided at fixed tables or counters, knee spaces at least 27" high, 30" wide, and 19" deep shall be provided. (1122b.3, fig 11b-13).
4. The tops of tables and counters shall be 28" to 34" from the floor or ground. (1122b.4).
5. Where a single counter contains more than one transaction station, such as a bank counter with multiple teller windows or a retail sales counter with multiple cash register stations, at least 5 percent, but never less than one of each type of station shall be located at a section of counter that is at least 36" long and no more than 28 to 34" high. (1122b.4).

SIGNS AND IDENTIFICATION

California's standards for signage are more stringent and are significantly larger and with multiple braille requirements, americans with disabilities act (ADA) section 4.30. (1117b.5). The international symbol of accessibility shall be the standard used to identify facilities that are accessible to and usable by physically disabled persons as set forth in title 24 and as specifically required in this section. (1117b.5.8.1, fig 11b-6).

1. The international symbol of accessibility shall consist of a white figure on a blue background. The blue shall be equal to color no. 15090 in federal standard 595b. (1117b5.8.1.1).
2. All building and facility entrances that are accessible to and usable by persons with disabilities and at every major junction along or leading to an accessible route of travel shall be identified with a sign displaying the international symbol of accessibility and with additional directional signs, as required, to be visible to persons along approaching circulation paths. (1117b.5.8.1.2. & 1127b.3).
3. When permanent identification is provided for rooms and spaces of a building or site, raised letters shall be provided and shall be accompanied by braille in conformance with section 1117b.5.2 through 1117b.5.7. Signs shall be installed on the wall adjacent to the latch outside of the door. Where there is no wall space on the latch side, including at double leaf doors, signs shall be placed on the nearest adjacent wall, preferably on the right. Mounting height shall be 60" above the finished floor to the centerline of the sign. Mounting location shall be determined so that a person may approach within 3inches of signage without encountering protruding objects or standing within the swing of a door. (1117b.5.1, 1117b.5.7).
4. When signs direct to or give information about permanent rooms and functional spaces of a building or site, they shall comply with sections 1117b.5.2, 1117b.5.3, 1117b.5.4. Means of egress signs and identification for visual exit signs, graphics, illumination, power source, tactile exit signage, tactile stair level identification and special egress control devices shall comply with sections 1003.2.8.1, 1003.2.8.5, 1003.2.9, 1003.2.10 and 1003.3.1.10. (1117b.5.1.2).
5. When raised characters or when pictogram symbols are used, they shall conform to the following: (1117b.5.5).
   a. Characters on signs shall be raised or recessed 1/32 inch minimum and shall be sans - serif uppercase characters accompanied by grade 2 braille complying with section 1117b.5.6. (1117b.5.5.1).
   b. Raised characters or symbols shall be a minimum of 5/8 inch high and a maximum of 2" high. (1117b.5.5.2).
   c. Pictorial symbol signs (pictograms) shall be accompanied by the verbal description placed directly below the pictogram. The outside dimension of the pictogram field shall be a minimum of 6" in height. (1117b.5.5.3).
   d. Characters and braille shall be in a horizontal format. Braille should be placed a minimum of 3/8" and a maximum of 1/2" directly below the tactile characters; flush left or centered. When tactile sign is multi-lined, all braille shall be placed together below all lines of tactile text. (1117b.5.5.4).
6. Characters on signs shall have a width-to-height ratio of between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10. (1117b.5.3).
7. Characters, symbols and their background shall have a non-glare finish. Characters and symbols shall contrast with their background, either light characters on a dark background or dark characters on a light background. (1117b.5.2).
8. Characters and numbers on signs shall be sized according to the viewing distance from which they are to be read. The minimum height is measured using an upper case 'x'. Lower case characters are permitted. For signs suspended or projected above the finish floor in compliance with section 1133b.8.6, the minimum character height shall be 3 ". (1117b.5.4).
9. Contracted grade 2 braille shall be used wherever braille is required in other portions of these standards. Dots shall be 1/10" on centers in each cell with 2/10" space between cells. Dots shall be raised a minimum of 1/40 inch above the background. (1117b.5.6).
10. Pole supported pedestrian traffic control buttons shall be identified with color coding consisting of a textured horizontal yellow band 2" in width encircling the pole, and a 1 inch wide dark border band above and below this yellow band. Color-coding should be placed immediately above the control button. Control buttons shall be located no higher than 48" above the surface adjacent to the pole. (1117b.5.9).

ELECTRICAL

1. The highest operable part of all controls, dispensers, receptacles and other operable equipment shall be shall be installed at an accessible location meeting the clearances and reach range requirements of section 1118b.5 and 1118b.6 and not less than 15" above the floor or working platforms. (1117b.6.3).
2. The center of the grip of the operating handle of controls or switches intended to be used by the occupant of the room or area to control lighting and receptacle outlets, appliances, or cooling, heating, and ventilating equipment shall be 48" above the floor or working platform. (1117b.6, 5.1).
3. The center of electrical receptacle outlets on branch circuits of 30 amperes or less shall be installed not more than 48" nor less than 14" above the floor or working platform. (1117b.6.5.2).

CLIENT

MWDOC

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FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP

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STAMP

STAMP

ISSUE		
REV.	DESCRIPTION	DATE
	AS-B

ENTRANCES AND EXITS

Exit as defined is "that portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protective\'s as required to provide a protected path of egress travel between the exit access and the exit discharge. Exits include exterior exit doors at ground level, exit enclosures, exit passageways, exterior exit stairs, exterior exit ramps and horizontal exits." (1002.1).

Public way as defined is a street, alley or other parcel of land open to the outside air leading to a street, that has been deeded, dedicated or otherwise permanently appropriated to the public for public use and which has a clear width and height of not less than 10 feet. (1002.1).

1. All entrances and exterior ground floor exit doors to buildings and facilities shall be made accessible to persons with disabilities. (1133b.1.1.1.1).
2. Revolving doors shall not be used as a required entrance for persons with disabilities. (1133b.2.3.3).
3. During periods of partial or restricted use of a building or facility, the entrances used for primary access shall be accessible to and usable by persons with disabilities. (1133b.1.1.1.2).
4. Recessed doormats shall be adequately anchored to prevent interference with wheelchair traffic. (1133b.1.1.1.3, fig. 11b-25).
5. All gates, including ticket gates, shall meet all applicable accessibility specifications of doors. (1133b.1.1.1.4).
6. Every required exit doorway shall be capable of opening at least 90 degrees, shall have a minimum clear opening of 32", and shall be of a size as to permit the installation of a door not less than 3 feet in width and not less than 6'-8" in height. (1133b.2.2).
7. The space between two consecutive door openings in a vestibule, serving other than a requirered exit stairway, shall provide a minimum of 48" of clear space from any door opening into such vestibule when the door is positioned at an angle of 90 degrees from its closed position. Doors in a series shall swing either in the same direction or away from the space between the doors. See figures 11b-30 & 11b-31. (1133b.2.4.4).

ENTRANCES AND EXITS

1. All entrances and all exterior ground floor exit doors to buildings and facilities shall be made accessible to persons with disabilities.
2. All accessible entrances shall be identified with at least one standard sign and with additional directional signs, as required, visible from approaching pedestrian ways.
3. All gates, including ticket gates, shall meet all applicable accessibility specifications of doors.
4. Every required exit doorway which is located within an accessible path of travel shall be capable of opening at least 90 degrees, shall have a minimum clear opening of 32", and shall be of a size as to permit the installation of a door not less than 3' in width and not less then 6'-8" in height.
5. Latching and locking doors that are hand activated and which are in a path of travel shall be operable with a single effort by lever type hardware, by panic bars, push-pull activating bars, or other hardware designed to provide passage without requiring the ability to grasp the opening hardware.
6. Hand-activated door opening hardware shall be centered between 30" and 44" above the floor.
7. The floor and landing on each side of an entrance or passage door shall be level and clear. The level and clear area shall have a length in the direction of door swing of at least 60" and the length opposite the direction of door swing of 44" as measured at right angles to the plane of the door in its closed position.
8. The floor or landing shall be not more than 1/2" lower than the threshold of the doorway. Change in level between 1/4" and 1/2" shall be beveled with a slope no greater than 1:2.
9. The bottom 10" of all doors except automatic and sliding shall have a smooth uninterrupted surface to allow the door to be opened by a wheelchair footrest without creating a trap or hazardous condition. Where narrow frame doors are used, a 10" high smooth panel shall be installed on the push side of the door, which will allow the door to be opened by a wheelchair footrest without creating a trap or hazardous condition.
10. Maximum effort to operate interior and exterior doors shall not exceed 5 pounds, with such pull or push effort being applied at right angles to hinged doors and at the center plane of sliding or folding doors. Compensating devices or automatic door operators may be utilized to meet the above standards. When fire doors are required, the maximum effort to operate the door may be increased to the minimum allowable by the appropriate administrative authority, not to exceed 15 pounds.
11. For hinged doors, the opening width shall be measured with the door position at an angle of 90 degrees from the closed position.
12. Where a pair of doors is utilized, at least one of the doors shall provide a clear, unobstructed opening width of 32" with the leaf positioned at an angle of 90 degrees from its closed position.
13. When an automatic door operator is utilized to operate a pair of doors, at least one of the doors shall provide a clear unobstructed opening width of 32" with the door positioned at an angle of 90 degrees from its closed position.
14. Minimum maneuvering clearances at doors shall be as shown in figure 11b-26. The floor or ground area within the required clearances shall be level and clear.
15. There shall be a level and clear floor or landing on each side of a door. The level area shall have a length in the direction of door swing of at least 60" and the length opposite the direction of door swing of 48" as measured at right angles to the plane of the door in the closed position. Where the plane of the doorway is offset or located in an alcove a distance more than 8" measured from the plane of the doorway to the face of the wall, the door shall be provided with 60" maneuvering clearance for front approach.
16. Provide clear space of 12" past strike edge of the door on the opposite side to which the door swings if the door is equipped with both a latch and a closer.
17. Where the door opens into a stair of a smoke proof enclosure, the landing need not have a length of 60".
18. When the door has a closer, then the sweep period of the closer shall be adjusted so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3" from the latch, measured to the landing edge of the door.
19. Where turnstiles and crowd control barriers are utilized in a facility for the purpose of providing fully controlled access, such as where an admission price is charged, a door or gate that is accessible to persons with disabilities shall be provided adjacent to or within a distance not to exceed 30' from each turnstile exit or entrance. This alternate passageway shall be maintained in an unlocked condition during business hours and the door or gate shall not activate a publicly audible alarm system. A sign is posted stating "the door or gate may be latched where all gates are restricted and controlled by an attendant and a sign". "all gates are restricted and controlled by attendant." the accessible door or gate shall provide the same use pattern. Where posts, rails, or other pedestrian controls are utilized to create crowd control aisles or lanes, an minimum aisle width not less than indicated in figure 11b-5e (a) and (b) with 32" of clear opening.
20. Accessible entrances to and from exits from a building must be provided, according to ADA ag 4.1.3 (8) and applicable codes.
21. Maneuvering clearances at doors shall be level (1:50 max. Slope) and clear if doors are not automatic or power assisted.
22. Revolving doors shall not be used as a required entrance for persons with disabilities.
23. All doors in alcoves shall comply with the clearances for front approaches.
24. Provide tactile exit sign per section.
25. Accessible stall in multi-accommodation toilet facilities shall be a minimum of 60" wide per .

AISLES

1. Every corridor shall be as shown on the plans and shall be determined as per CBC chapter 10, but shall not be less than 44" in width.
2. Every portion of every building in which are installed seats, tables, merchandise, equipment or similar materials shall be provided with aisles leading to an exit.

NOTIFICATION APPLIANCES FOR THE HEARING IMPAIRED

1. Approved notification appliances for the hearing impaired shall be installed in accordance with the provisions of NFPA 72 and CBC, chapter 9, section 907.9.1 and 907.9.2.

a.	Restrooms	g.	Occupational Shops
b.	Corridors	h.	Occupied Rooms where Ambient Noise impairs hearing of the Fire Alarm.
c.	Music Practice Rooms	i.	Lobbies
d.	Band Rooms	j.	Meeting Rooms
e.	Gymnasium	k.	Classrooms
f.	Multipurpose Rooms		

2. Strobe signaling devices required for the hearing impaired shall be state fire marshall, NFPA 72: per chapter 6, section 6-4, visible characteristics, public mode.
3. The flash rate shall not exceed 3 flashes per second nor be less than 1 flash every three seconds NFPA 72: per chapter 6, section 6-4.2, light pulse characteristics.
4. Audible signals intended for operation in the public mode shall have a sound level of not less than 75 dba at 10' or more than 130 dba at the minimum hearing distance from the audible appliance. NFPA 72: per chapter 6, section 6-3, audible characteristics, public mode..
5. Audible signals intended for operation in the private mode shall have a sound level of not less than 45 dba at 10' or more than 130 dba at the minimum hearing distance from the audible appliance. NFPA 72: per chapter 6, section 6-3.2, audible characteristics, private mode.
6. The light source color shall be clear or nominal white and shall not exceed 1000 candela (effective intensity). (NFPA 72 sec 4-4.2.2).
7. Wall mounted appliances shall be mounted such that the entire lens is not less than 80" and not greater than 96" above the finished floor. Ceiling-mounted appliances shall be installed per table 4-4.4.1.1. (NFPA 72 sec 4-4.4).
8. Notification appliances installed in rooms shall be spaced as follows: (NFPA 72 sec4-4.4.1)
   1). Spacing shall be in accordance with figure 4-4.4.1. And tables 4-4.4.1 and (b). The separation between appliances shall not exceed 100'. (NFPA 72 sec 4-4.4.1).
   2). Visible notification appliances shall be installed in accordance with table 4-4.4.1.1 (a), using one of the following: (NFPA 72 sec 4-4.4.1.1).
      a. A single visible notification appliance.
      b. Two visible notification appliances located on opposite walls.
      c. In rooms 80' x 80' or greater, where there are more than two appliances in any field of view, they shall be spaced a minimum of 55' from each other.
      d. More than two visible notification appliances that flash in synchronization.

   Note: Where a room configuration is not square, the square room size that entirely encompasses the room or subdivides the room into multiple squares shall be used.
9. Notification appliances installed in corridors shall be spaced as follows: (NFPA 72 sec. 4-4.4.1).
   a. Table 4-4.4.2.1 shall apply to corridors not exceeding 20' in width. For corridors greater than 20' in width, refer to figure 4-4.4.1.1 and tables 4-4.4.1.1 (a) and (b). (NFPA 72 sec 4-4.4.2.1)
   b. Visual appliances shall be rated not less than 15 candela. (NFPA 72 sec 4-4.4.2.1).
   c. The visible appliances shall be located no more than 15' from the end of the corridor with a separation no greater than 100' between appliances. (NFPA 72 sec 4-4.4.2.2).
   d. Where there is an interruption of the concentrated viewing path, such as a fire door, an elevation change, or any other obstruction, the area shall be considered as a separate corridor. (NFPA 72 sec 4-4.4.2.2).
10. An electrical plan check and fire dept. Plan check is required prior to installation of visual notification appliances

SANITARY FACILITIES

1. Toilet facilities that serve buildings, facilities or portions of buildings or facilities that are required by these standards to be accessible to persons with disabilities, shall be on an accessible route and shall conform to the requirements of section 1115b. (1115b.1).
2. Where separate facilities are provided for persons of each sex, these facilities shall be accessible to persons with disabilities. Where unisex facilities are provided, these facilities shall be accessible to persons with disabilities. (1115b.1.1, fig. 11b-1a).
   a. Toilet centering from wall 18" 15"* 12" toilet seat height 17"-19" 15" 10"-12" grab bar height (side) 33" 27"* 20"-22" toilet paper in front of toilet 12" maximum 6" maximum
   b. 6" max napkin disposal in front of toilet 12" max 12" maximum n/a dispenser or mirror
   c. Height 40" max 36" max 32" max lavatory/sink top height 34" max 29" max 24" max.
   d. Lavatory/sink knee clearance 27" min 24" min 19" min urinal lip height 17" max 15" max
   e. 13" min urinal flush handle height 44" max 37" max 32" max drinking fountain bubbler
   f. 13" min urinal flush handle height 44" max 37" max 32" max drinking fountain bubbler min
   g. Ramp/stair handrail height 34"-38" 27" 22"
3. Doorways leading to men's sanitary facilities shall be identified by an equilateral triangle 1/4" thick with edges 12" long and a vertex pointing upward. Women's sanitary facilities shall be identified by a circle 1/4" thick and 12" in diameter. (1115b.6).
4. Unisex sanitary facilities shall be identified by a circle 1/4" thick, 12" in diameter, with a 1/4" thick triangle superimposed on the circle and within the 12" diameter. (1115b.6).
5. Geometric (circle & triangle) symbols on sanitary facility doors shall be centered on the door at a height of 60" and their color and contrast shall be distinctly different from the color and contrast of the door. (1115b.6).

   Note: See also section 1117b.5.1 for additional signage requirements applicable to sanitary facilities.

SINGLE ACCOMMODATION SANITARY FACILITIES

Note: Single accommodation sanitary facility is defined as "a room that has not more than one of each type of sanitary fixture, is intended for use by only one person at a time, has no partition around the toilet, and has a door that can be locked on the inside by the room occupant". (202).

1. Show sufficient space in the toilet room for a wheelchair measuring 30" wide by 48" long to enter the room and permit the door to close. (1115.B.3.2.1).
2. Show a clear floor space of at least 60" in diameter, or a t-shaped space complying with figures 11b-12(a) and (b). No door shall encroach into this space for more than 12". (1115b.3.2.1, fig 11b-1a).
3. Doors shall not swing into the clear floor space required for any fixture. (1115b.3.2.2).
4. Show that the centerline of the water closet fixture shall be 18" from the side wall or partition. On the other side of the water closet, provide a minimum 28" wide clear floor space if the water closet is adjacent to a fixture or a minimum of 32" wide clear floor space if the water closet is adjacent to a wall or partition. This clear space shall extend from the rear wall to the front of the water closet. (1115b.4.1, fig 11b-1a).
5. All doors, fixtures, and controls shall be on an accessible route with a minimum clear width of 36" except at doors. If a person in a wheelchair must make a turn around an obstruction, the minimum clear width of the accessible route shall be as shown in figure 11b-5e. (1115b.3.2.4).
6. The entrance door shall contain a privacy latch which complies with section 1117b.6. (1115b.3.2.7).
7. Provide 18" clearance on the strike side of the door. (1115b.3.1).
8. In existing buildings, a single accommodation toilet water closet may be located in an area which provides a clear space of 36"wide by 48" long in front of the water closet. (1115b.3.2).

MULTIPLE ACCOMMODATION SANITARY FACILITIES

Note: Multiple accommodation sanitary facility is defined as "a room that has more than one sanitary fixture, is intended for the use of more than one person at a time, and which usually is provided with privacy compartments or screens shielding some fixtures from view". (202).

1. Show a clear space measured from the floor to a height of 27" above the floor, within the sanitary facility room, of sufficient size to inscribe a circle with a diameter not less than 60". Doors shall not swing into the floor space required for any fixture. Other than the door to the accessible water closet compartment, a door, in any position, may encroach into this space by not more than 12". (1115b.3.1.1 & 1115b3.1.2, fig 11b-1b).
2. A water closet fixture located in a compartment shall provide a minimum 28" wide clear space from a fixture or a minimum 32" wide clear space from a wall at one side of the water closet. The other side of the water closet shall provide 18" from the centerline of the water closet to the wall. Grab bars shall not project more than 3" into these clear spaces. The stall shall be minimum of 60" wide. (1115b.4.1.1, fig 11b-1b).
3. If the compartment has a side-opening door, show a minimum 60" wide and 60" deep clear floor space in front of the water closet. (1115b.3.1.4.2).
4. If the compartment has an end-opening door, show a minimum 60" wide and 48" deep clear floor space in front of the water closet. The door shall be located in front of the clear floor space and diagonal to the water closet, with a maximum stile width of 4". (1115b.3.1.4.3, fig. 11b-1a & b).
5. Note that the water closet compartment shall be equipped with a door that has an automatic-closing device, and shall have a clear, unobstructed opening width of 32" when located at the end and 34" when located at the side with the door positioned at an angle of 90 degrees from its closed position. (1115b.3.1.4.4, fig 11b-1a & b).
6. Note that the inside and outside of the compartment door shall be equipped with a loop or u-shaped handle immediately below the latch. The latch shall be flip-over style, sliding, or other hardware not requiring the user to grasp or twist. (1115b.3.1.4.5).
7. Except for door opening widths and door swings, show a clear unobstructed access not less than 44" shall be provided to water closet compartments designed for use by persons with disabilities. The space immediately in front of a water closet compartment shall be not less than 48" as measured at right angles to compartment door in its closed position. (1115b.3.1.4.5, fig 11b-1b).
8. Where six or more compartments are provided within a multiple accommodation toilet room, in addition to the standard accessible stall required above, at least one additional ambulatory accessible compartment shall be 36" wide with an outward swinging self - closing door and parallel grab bars complying with sections 1115b.4.1, item 3. (1115b.3.1.5).
9. Provide an 18" clearance at the strike side of water closet compartment doors (no exception) (1115b.3.1, item 4.4).

SANITARY FACILITY FIXTURES AND ACCESSORIES

1. Show the height of accessible water closets shall be a minimum of 17" and a maximum of 19" measured to the top of a maximum 2" high toilet seat, except that 3" seats shall be permitted only in alterations where the existing fixture is less than 15" high. (1115b.4.4).
2. Show a clear floor space 30" by 48" in front of a lavatory to allow a forward approach. Such clear floor space shall adjoin or overlap an accessible route and shall extend a maximum of 19" into knee and toe space underneath the lavatory. A door swing shall not encroach into this clear space. (1115b.4.3.3, 1115b.3.2.2, fig. 11b-1b).
3. Show that all lavatories, when located adjacent to a side wall or partition, shall be a minimum distance of 18" to the center line of the fixture. (1115b.4.3.2, fig. 11b-1a).
4. Show that lavatories that are designated to be accessible shall be a minimum 17" in horizontal depth and mounted with the rim or counter edge no higher than 34" above the finished floor and with vertical clearance measured from the bottom of the apron or the outside bottom edge of the lavatory of 29", reducing to 27" at a point located 8" back from the front edge. In addition, a minimum 9" high toe clearance must be provided extending back toward the wall to a distance no more than 6" from the back wall. The toe clearance space must be free of equipment or obstructions. (1115b.4.3.2, fig.11b-1d).
5. Show that hot water and drain pipes under accessible lavatories shall be insulated or otherwise covered. There shall be no sharp or abrasive surfaces under lavatories. (1115b.4.3.4).
6. Where urinals are provided, at least one shall have a clear floor space 30" by 48" in front of the urinal to allow forward approach. (1115b.4.2.3).
7. Show that urinals shall be floor mounted, stall-type or wall hung. Where one or more wall hung urinals are provided, at least one with an elongated rim projecting a minimum of 14" from the wall, a maximum of 17" from the wall, and a maximum of 17" above the floor shall be provided. (1115b.4.2.1).
8. Note that controls for water closet flush valves shall be mounted on the wide side of toilet areas. Automatic spring to lifted position seats are not allowed. (1115b.4.1.5, 1115b.4.1.7).
9. Note that water closet and urinal flush valve controls, and faucet and operating mechanism controls, shall be operable with one hand, shall not require tight grasping, pinching, or twisting of the wrist, and shall be mounted no more than 44" above the floor. (1115b.4.1.5, 1115b.4.2.2, 1115b.4.3.1).
10. Note the force required to activate water closet and urinal flush valve controls, and faucet and operating mechanism controls, shall be no greater than 5 lbf. Electronic or automatic flushing controls are acceptable and preferable. (1115b.4.1.5, 115b.4.2.2, 1115b.4.3.1).
11. Note that self-closing faucet control valves are allowed if the faucet remains open for at least 10 seconds. (1115b.4.3.1).
12. Show that mirrors shall be mounted with the bottom edge of the reflecting surface no higher than 40" from the floor. (1115b.8.1).
13. If medicine cabinets are provided, at least one shall be located with a usable shelf no higher than 44" above the floor. A clear floor space 30" by 48" complying with section 1118b.4 shall be provided in front of a medicine cabinet to allow a forward or parallel approach. (1115b.8.2).
14. Where towel, sanitary napkins, waste receptacles, dispensers, or other equipment and controls are provided, show at least one of each type shall be located on an accessible route, with all operable parts, including coin slots, within 40" from the finished floor and shall comply with section 1117b.6. (1115b.8.3).
15. Show that toilet tissue dispensers shall be located on the wall within 12" of the front edge of the toilet seat, mounted below the grab bar at a minimum height of 19", and 36" maximum to the far edge from the rear wall. Dispensers that control delivery or that do not permit continuous paper flow shall not be used. (1115b.8.4, fig. 11b-1a).
16. Show that toilet room floors shall have a smooth, hard, non-absorbent surface such as portland cement, concrete, ceramic tile or other approved material which extends upward onto the walls at least 5". Walls within water closet compartments and walls within 24" of the front and sides of urinals shall be similarly finished to a height of 48" and, except for structural elements, the materials used in such walls shall be a type which is not adversely affected by moisture. (1115b.3.1.6).

MULTIPLE ACCOMMODATION SANITARY FACE. GRAB BARS

1. Show that grab bars for water closets not located within a compartment shall comply with section 1115b.7 and shall be provided on the side wall closest to the water closed and on the rear wall. (1115b.4.1.3).
2. Show that grab bars for water closets located within an accessible compartment shall comply with section 1115b.7 and shall be provided on the side wall closest to the water closet and on the rear wall. (1115b.4.1.3).
3. How that grab bars for water closets located within ambulatory accessible compartments shall be provided on both sides of the compartment. (1115b.4.1.3).
4. Show that the side grab bars shall be 42" long minimum, located 12" maximum from the rear wall, and extend 54" minimum from the rear wall. The front end shall be positioned 24" minimum in front of the water closet, and shall be securely attached and centered 33" above and parallel to the floor. (1115b.4.1.3.1, fig 11b 1a & 1b).
5. Show that the rear grab bars shall be 36" long minimum and extend from the centerline of the water closet 12" minimum on one side and 24" minimum on the other side. The rear grab bar shall be securely attached and centered 33" above and parallel to the floor, except that where a tank-type toilet is used, which obstructs placement at 33", the bar may be as high as 36" , with 1 1/2" minimum between the bar and top of tank. (1115b.4.1.3.2, fig 11b-1a).
6. Show the diameter or width of the gripping surfaces of a grab bar shall be 1 1/4" to 1 1/2" nominal, or the shape shall provide an equivalent gripping surface. If grab bars are mounted adjacent to a wall, the space between the wall and the grab bars shall be 1 1/2". (1115b.7.1, fig 11b-1c).
7. Note that the structural strength of grab bars, tub and shower seats, fasteners, and mounting devices shall meet the following specifications: (1115b.7.2).
   a. Bending stress in a grab bar or seat induced by the maximum bending moment from the application of a 250 lb. Point load shall be less than the allowable stress for the material of the grab bar or seat. (1115b.7.2.1).
   b. Shear stress induced in a grab bar or seat by the application of a 250 lb. Point load shall be less than the allowable shear stress for the material of the grab bar or seat, and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall not exceed the allowable shear stress. (1115b.7.2.2).
   c. Shear force induced in fastener or mounting devices from the application of a 250 lb. Point load shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever has the smaller allowable load. (1115b.7.2.3).
   d. Tensile force induced in a fastener by a direct tension force of a 250 lb. Point load, plus the maximum moment from the application of a 250-lb point load, shall be less than the allowable withdrawal load between the fastener and supporting structure. (1115b.7.2.4).
   e. Grab bars shall not rotate within their fittings. (1115b.7.2.5).
8. Note that the grab bar and any wall or other surface adjacent to it shall be free of any sharp or abrasive elements. Edges shall have a minimum radius of 1/8". (1115b.7.3).

DRINKING FOUNTAIN (as required by CBC Section 1117B.1)

1. Where only one drinking fountain area is provided on a floor, there shall be a drinking fountain which is accessible to individuals who use wheelchairs, and one accessible to those who have difficulty bending or stooping. This can be accommodated by the use of "hi-low" fountains, or by such other means as would achieve the required accessibility for each group on each floor. (1117b.1.1).
2. Where more than one drinking fountain is provided on a floor, 50% of those provided shall comply with items 1, 2, 4, and 5 of section 1115b.4.6 and shall be on an accessible route. All drinking fountains shall comply with section 1117b.1.1.
3. Shall have a clear knee space between the bottom of the apron and the floor or ground not less than 27" in height, 30" in width, and 8" in depth. The depth shall be taken from the front edge of the fountain back toward the wall or mounting post. (1117b.1.2).
4. Note that the knee and toe clearance space shall be free of equipment or obstructions. (2010 CBC 1117b.1.2).
5. Show a toe clearance of 9" in height above the floor, and 17" in depth from the front edge of the fountain. (1117b.1.2).
6. Show a clear floor space at least 30" by 48" shall be provided in front of the drinking fountain to allow forward approach. A side approach drinking fountain is not acceptable. (1117b.1.2).
7. All drinking fountains shall be located completely within alcoves or otherwise positioned so as not to encroach into pedestrian ways. The alcove in which the drinking fountain is located shall not be less than 32" in width and 18" in depth. Protruding objects located in alcoves or encroaching into pedestrian ways are permitted to project 4" into walks, halls, corridors, passageways, or aisles. (1117b.1.3, fig 11b-3).
8. Show that the drinking fountain bubbler shall be activated by a manually operated system not requiring a force greater than 5 lbf., that is front mounted or side mounted and located within 6" of the front edge of the fountain or preferably an electronically controlled device. (1117b.1.4, fig 11b-3).
9. Note that the bubbler outlet orifice shall be located within 6" of the front of the drinking fountain and shall be within 36" of the floor. The water stream from the bubbler shall be substantially parallel to the front edge of the drinking fountain. (1115b.1.4, fig 11b-3).
10. Note that the spout shall provide a flow of water at least 4" high so as to allow the insertion of a cup or glass under the flow of water. On an accessible drinking fountain with a round or oval bowl, the spout must be positioned so the flow of water is within 3" of the front edge of the fountain. (1117b.1.7).

ACCESSIBLE SINKS

1. Where provided, show that accessible kitchen sinks and noncommercial kitchen and counter bar sinks shall have a clear floor space at least 30" by 48" complying with 1118b.4 and providing a forward approach. The clear floor space shall be on an accessible route and shall extend a maximum of 19" underneath the sink. (1115b.4.3.1, fig 11b-1d).
2. Show that each accessible sink shall be a maximum of 6 1/2" deep. Sinks shall be mounted with the counter or rim no higher than 34" above the finish floor. Show knee clearance that is at least 27" high, 30" wide, and 19" deep under sinks. (1115b.4.3.2, item 1).
3. Note that hot water and drain pipes exposed under sinks shall be insulated or otherwise configured so as to protect against contact. There shall be no sharp or abrasive surfaces under sinks. (1115b.4.3.4, item 1).
4. Note that faucet controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls shall be not greater than 5 lbs. Lever-operated, push-type, and electronically controlled mechanisms are examples of acceptable designs. (1115b.4.3.1, item 1).
5. Note that self-closing faucet control valves are allowed if the faucet remains open for at least 10 seconds. (1115b.4.3.1, item 1).

RAMPS (EXTERIOR OR INTERIOR)

1. Any path of travel shall be considered a ramp if its slope is greater than 1' rise in 20' of horizontal run. (1133b.5.1).
2. The maximum slope of a ramp that serves any exit way, provides access for persons with physical disabilities, or is in the accessible route of travel shall be 1 foot rise in 12 feet of horizontal run (8.3 percent gradient). The least possible slope shall be used for any ramp. (1133b.5.3).
3. The cross slope of ramp surfaces shall be no greater than 1:50. (1133b.5.3.1).
4. Pedestrian ramps shall have a minimum clear width of 48", unless required to be wider by some other provision of this code. (1133b.5.2) (1133b.5.2).
5. Where a pedestrian ramp is the only exit discharge path serving entrances to buildings or when it serves an occupant load of 300 or more, the ramp shall have a minimum clear width of 60". (1133b.5.2).
6. Level landings shall be provided at the top and bottom of each ramp. (1133b.5.4.1, fig. 11b-38 & 39).
7. Intermediate landings shall be provided at intervals not exceeding 30" of vertical rise and at each change of direction. (1133b.5.4.1, fig 11b-38 & 39).
8. Top landings shall be not less than 60" wide and shall have a length of not less than 60" in the direction of ramp run. Landings at the bottom of ramps shall have a dimension in the direction of ramp run of not less than 72". (1133b.5.4.2, fig. 11b-38 & 39).
9. Doors in any position shall not reduce the minimum dimension of the landing to less than 42" and shall not reduce the required width by more than 3" when fully open. (1133b.5.4.3, fig 11b-39(b)).
10. The width of the landing shall extend 24" past the strike edge of any door or gate for exterior ramps and 18" past the strike edge for interior ramps. (1133b.5.4.4, fig. 11b-39).
11. All ramp landings shall be level with maximum slope in any direction not to exceed 1/4" per foot (2.083 percent slope). (1133b.5.4.1, 1102b).
12. At bottom and intermediate landings, the width shall be at least the same as required for the ramp. (1133b.5.4.5, fig 11b-38 & 39).
13. Intermediate and bottom landings at a change of direction in excess of 30 degrees shall have a dimension in the direction of ramp run of not less than 72" to accommodate the handrail extension. (1133b.5.4.6, fig 11b-38).
14. Other intermediate landings shall have a dimension in the direction of ramp run of not less than 60". (1133b.5.4.7, fig 11b-38).
15. Handrails are required on ramps that provide access if the ramp slope exceeds 1 foot rise in 20 feet of horizontal run (5 percent gradient), except that at exterior door landings, handrails are not required on ramps less than 6" rise or 72" in length. (1133b.5.5.1).
16. Handrails shall be placed on each side of each ramp, shall be continuous the full length of the ramp, shall be 34 to 38" above the ramp surface to the top of the handrails, shall extend a minimum of 1 foot beyond the top and bottom of the ramp, and shall parallel the floor or ground surface. Handrails shall always be continuous and the ends of handrails shall be either rounded or returned smoothly to the floor, wall or post. (1133b.5.5.1, fig 11b-27(b) & (c)).
17. The grip portion of handrails shall be not less than 1 1/4" nor more than 1 1/2" in cross sectional nominal dimension, or the shape shall provide an equivalent gripping surface, and all surfaces shall be smooth with no sharp corners. Handrails shall not rotate within their fittings. (1133b.5.5.1, fig 11b-36).
18. Handrail projecting from a wall shall have a space of 1 1/2" between the wall and the handrail. (1133b.5.5.1, fig. 11b-36).
   a. Handrails may be located in a recess if the recess is a maximum of 3" deep and extends at least 18" above the top of the rail. (1133b.5.5.1, fig. 11b-36).
   b. Any wall or other surface adjacent to handrails shall be free of sharp or abrasive elements. Edges shall have a minimum radius of 1/8 i inch. (1133b.5.5.1, fig. 11b-36).
19. Where the ramp surface is not bounded by a wall, the ramp shall comply with one of the following requirements. (1133b.5.6, fig. 11b-27(b) & (c)).
   a. A guide curb a minimum of 2" in height shall be provided at each side of the ramp; (1133b.5.6.1) or
   b. A wheel guide rail shall be provided, centered 3", plus or minus 1 inch above the surface of the ramp. (1133b.5.6.2).
20. In existing buildings or facilities where the extension of the handrail in the direction of the ramp run would create a hazard, the extension may be turned 90 degrees to the run of the ramp. (1133b.5.5.1.1, 1133b.4.2.4).
21. Ramps more than 30" above the adjacent ground shall be provided with guards that comply with section 1013. Such guards shall be continuous from the top of the ramp to the bottom of the ramp. (1133b.5.7).

CLIENT

MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

STAMP

ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

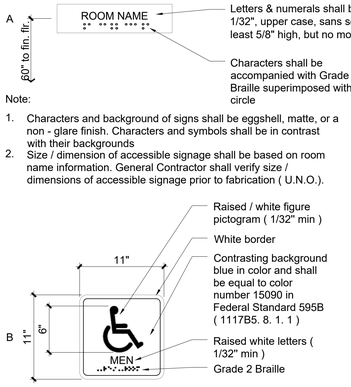
SHEET TITLE

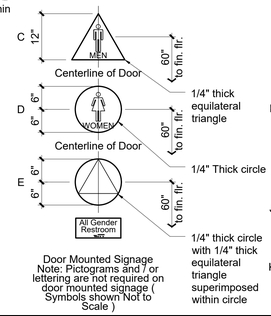
ACCESSIBILITY NOTES

SHEET NUMBER

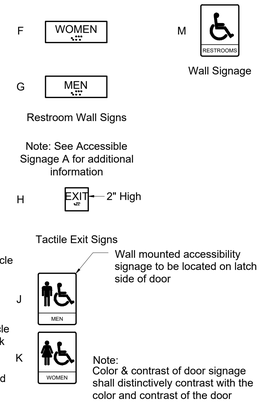
G-004

SHEET NO. OF



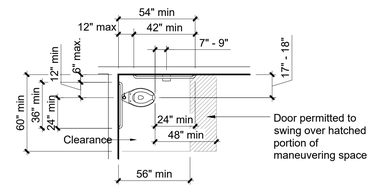


Door Mounted Signage
Note: Pictograms and / or lettering are not required on door mounted signage (Symbols shown Not to Scale)

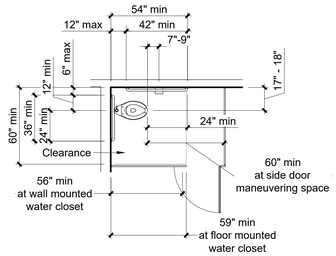


ACCESSIBLE SIGNAGE

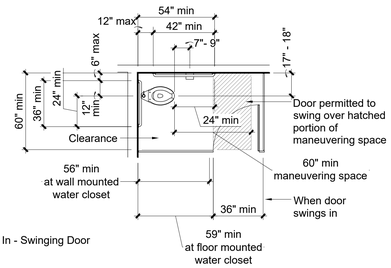
SCALE: 1/4" = 1'-0" | 16



A Size of Clearance at Water Closet



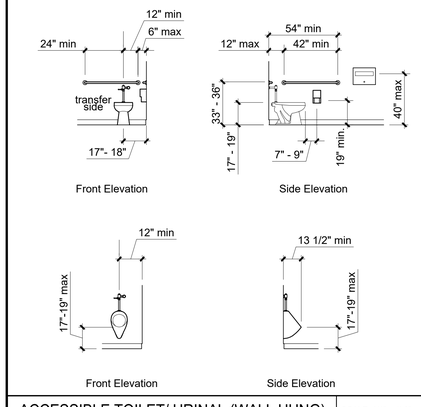
B Out - Swinging Door



C In - Swinging Door

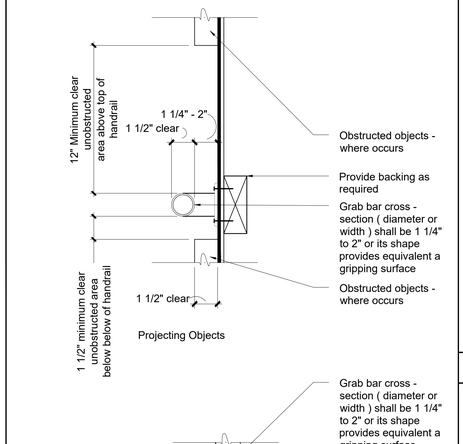
ACCESSIBLE TOILET

SCALE: 1/4" = 1'-0" | 18



ACCESSIBLE TOILET/ URINAL (WALL HUNG)

SCALE: 1/4" = 1'-0" | 17



Note:

Maximum projection into clear space shall be 3"

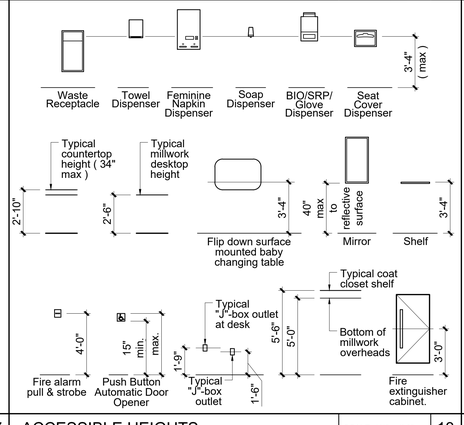
Grab bars shall not rotate within their fittings

A grab bar and any wall or other surface adjacent to it shall be free of any sharp or abrasive elements

Edges shall have a min. radius of 1/8"

GRAB BAR

SCALE: 3" = 1'-0" | 14



ACCESSIBLE HEIGHTS

SCALE: 1/4" = 1'-0" | 13

DIVISION 7 : COMMUNICATION ELEMENTS AND FEATURES

11B - 705.1 Detectable Warnings

11B - 705.1.1 General

Detectable warnings shall consist of a surface of truncated domes and shall comply with Section 11B-705.

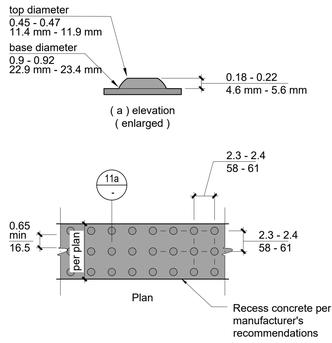
11B - 705.1.1.1 Dome Size

Truncated domes in a detectable warning surface shall have a base diameter of 0.9 inch (22.9 mm) minimum and 0.92 inch (23.4 mm) maximum, a top diameter of 0.45 inch (11.4 mm) minimum and 0.47 inch (11.9 mm) maximum, and a height of 0.2 inch (5.1 mm).

11B - 705.1.1.2 Dome Spacing

Truncated domes in a detectable warning surface shall have a center - to - center spacing 2.3 inches (58 mm) minimum and 2.4 inches (61 mm) maximum, and a base - to - base spacing of 0.65 inch (16.5 mm) minimum, measured between the most adjacent domes on a square grid.

Exceptions: Where installed in a radial pattern, truncated domes shall have a center - to - center spacing of 1.6 inches (41 mm) minimum to 2.4 inches (61 mm) maximum.



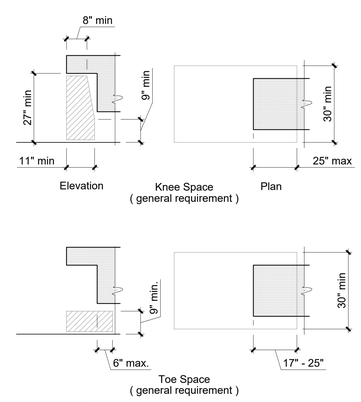
NOTE:

Detectable warning shall be of contrasting color with adjacent surface Light - on - dark or Dark - on - light. Material shall be integral

Fig. 11B-705.1
Size and Spacing of Trucated Domes

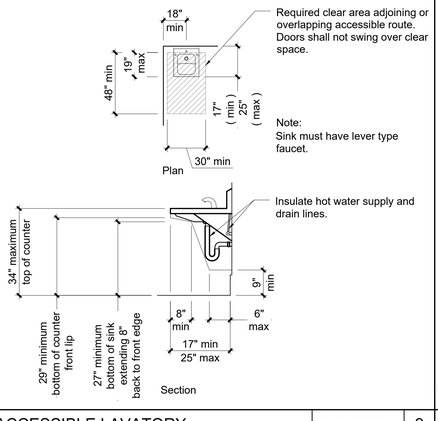
ACCESSIBLE WALKWAY-TRUNCATED DOMES

SCALE: 1/4" = 1'-0" | 11



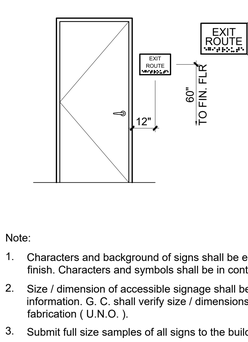
KNEE & TOE SPACE (GENERAL REQUIREMENT)

SCALE: 1/4" = 1'-0" | 10



ACCESSIBLE LAVATORY

SCALE: 1/4" = 1'-0" | 9

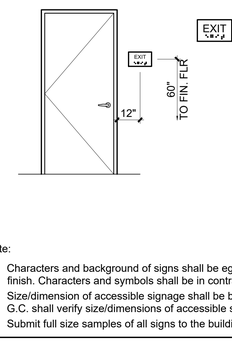


Note:

1. Characters and background of signs shall be eggshell, matte, or a non - glare finish. Characters and symbols shall be in contrast with their backgrounds
2. Size / dimension of accessible signage shall be based on room name information. G. C. shall verify size / dimensions of accessible signage prior to fabrication (U.N.O.).
3. Submit full size samples of all signs to the building owner and tenant for approval.

TACTILE EXIT ROUTE SIGNAGE

SCALE: 3/8" = 1'-0" | 8

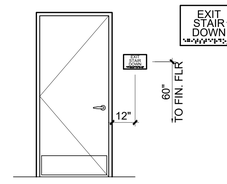


Note:

1. Characters and background of signs shall be eggshell, matte, or a non - glare finish. Characters and symbols shall be in contrast with their backgrounds
2. Size/dimension of accessible signage shall be based on room name information. G.C. shall verify size/dimensions of accessible signage prior to fabrication (U.N.O.).
3. Submit full size samples of all signs to the building owner and tenant for approval.

TACTILE EXIT SIGNAGE

SCALE: 3/8" = 1'-0" | 7



Note:

1. Characters and background of signs shall be eggshell, matte, or a non - glare finish. Characters and symbols shall be in contrast with their backgrounds
2. Size / dimension of accessible signage shall be based on room name information. G. C. shall verify size / dimensions of accessible signage prior to fabrication (U.N.O.).
3. Submit full size samples of all signs to the building owner and tenant for approval.

TACTILE EXIT STAIR DOWN SIGNAGE

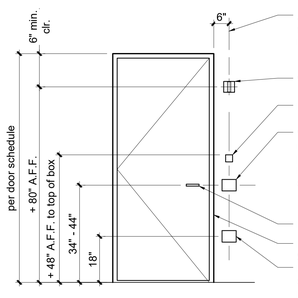
SCALE: 3/8" = 1'-0" | 6

Control elevations are comprised of:

All dimensions given are from FFL datum. Finish floor material is assumed to be 3/8" thick glue down carpet. Floor finish and thickness will vary from location to location. Refer to plans and details for specific flooring Information.

No allowance has been made for any depressions or elevations in the slab. Elevation heights should Take into account any variations in the floor slab.

Certain elevation dimensions are associated with code required maximum or minimum mounting heights. Such dimensions should be held despite variations in the slab. Code dimensions are in parenthesis with an asterisk next to the critical dimension. E.G.: (* +15" min.)

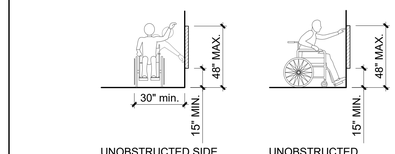


Notes:
1. All vertical dimensions are Shown from finish floor to location shown.

2. The thermostat and card readers shall be located so that the top of the outlet box is no more than 48" nor less than 15" to the bottom of the outlet box above the finished Floor (2016 CBC 1142A.2 & 1143A.9).

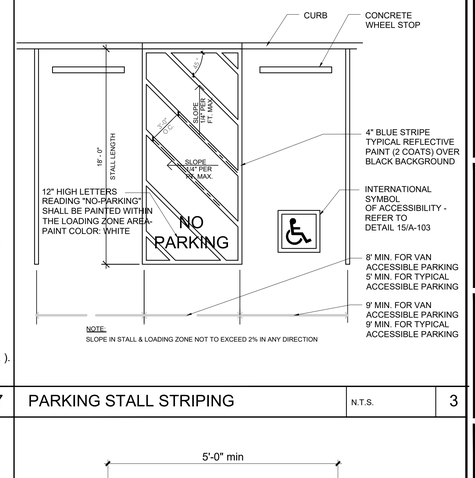
MOUNTING HEIGHTS AT DOOR

SCALE: 1/2" = 1'-0" | 1



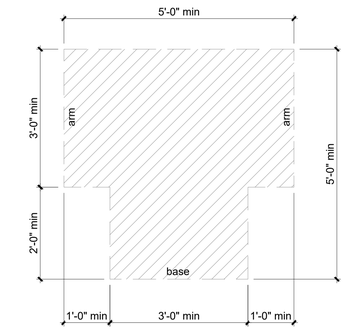
ADA REACH RANGE

SCALE: 1/4" = 1'-0" | 4



PARKING STALL STRIPING

N.T.S. | 3



T-SHAPED TURNING SPACE

SCALE: 3/4" = 1'-0" | 2

CLIENT
MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT
IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

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ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

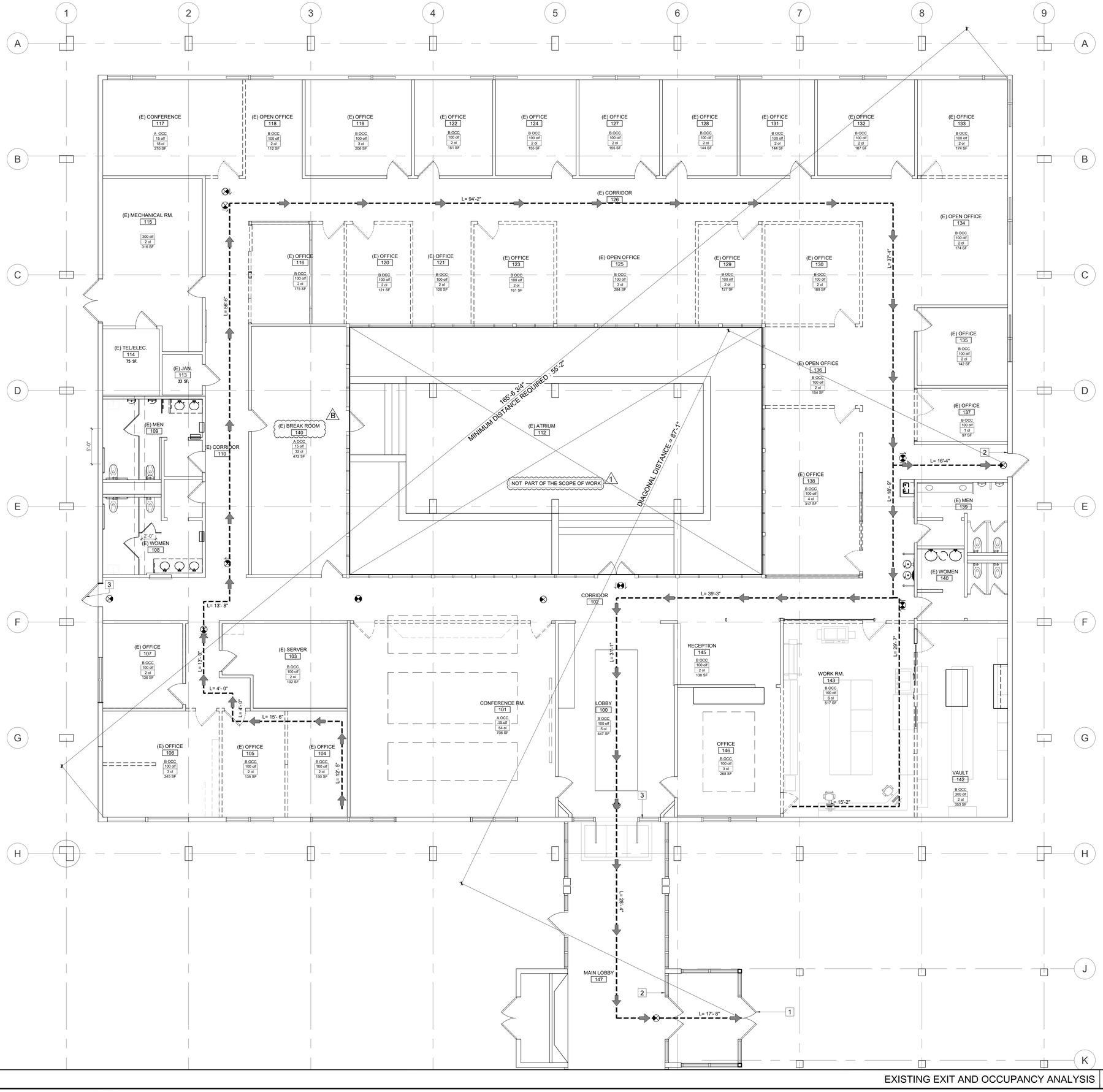
SHEET TITLE

ACCESSIBILITY DETAILS

SHEET NUMBER

G-005

SHEET NO. OF



EXISTING EXIT AND OCCUPANCY ANALYSIS | 3/16" = 1'-0" | 1

KEY NOTES

1. EXISTING INTERNATIONAL SYMBOL OF ACCESSIBILITY
2. NEW TACTILE EXIST SIGNAGE PER, 7/ G005
3. NEW TACTILE EXIT ROUTE SIGNAGE PER, 8/ G005
4. NOT AN EXIT DOOR

CODE REQUIREMENTS

MAXIMUM TRAVEL DISTANCE:

MAXIMUM TRAVEL DISTANCE TO EXITS FOR A B OCCUPANCY FULLY SPRINKLERED BUILDING (CBC 2016 1017.2): 300'-0"

EXIT CALCULATION PER CBC TABLE 1015.1
2 EXITS REQUIRED (OVER 49 OCCUPANTS)

MAXIMUM DIAGONAL DISTANCE 165'- 6"
MAXIMUM DISTANCE BETWEEN EXITS FOR FULL SPRINKLERED BUILDING = 74'- 7" PROVIDED

OCCUPANCY	Sq.ft.	O.L
GROUP 'B' - OCCUPANCY	6,049 Sq.ft.	76
GROUP 'A' - OCCUPANCY	1,540 Sq.ft.	104
RESTROOMS	556 Sq.ft.	
JANITOR ROOM	36 Sq.ft.	
ELECTRICAL ROOM	75 Sq.ft.	
CIRCULATION AREA	2,132 Sq.ft.	
	180 OCCUPANTS	

PLUMBING CALCULATIONS

Required Plumbing Fixtures Required for a 'B' Occupancy

Total Occupant Load based on the 2016 CBC : 180 = 90 men and 90 women

Gender	REQUIRED Lavatory	Water Closet	Urinals	Provided		
Female	2	4	N/A	Lavatories	5	provided
				Water Closets	4	provided
Male	2	2	1	Lavatories	5	provided
				Water Closets	3	provided
				Urinals	4	provided

LEGEND

- INDICATES 44" MIN. ACCESSIBLE PATH OF TRAVEL
- INDICATES MEANS OF BUILDING EGRESS
- (E) ILLUMINATED EXIT SIGN

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

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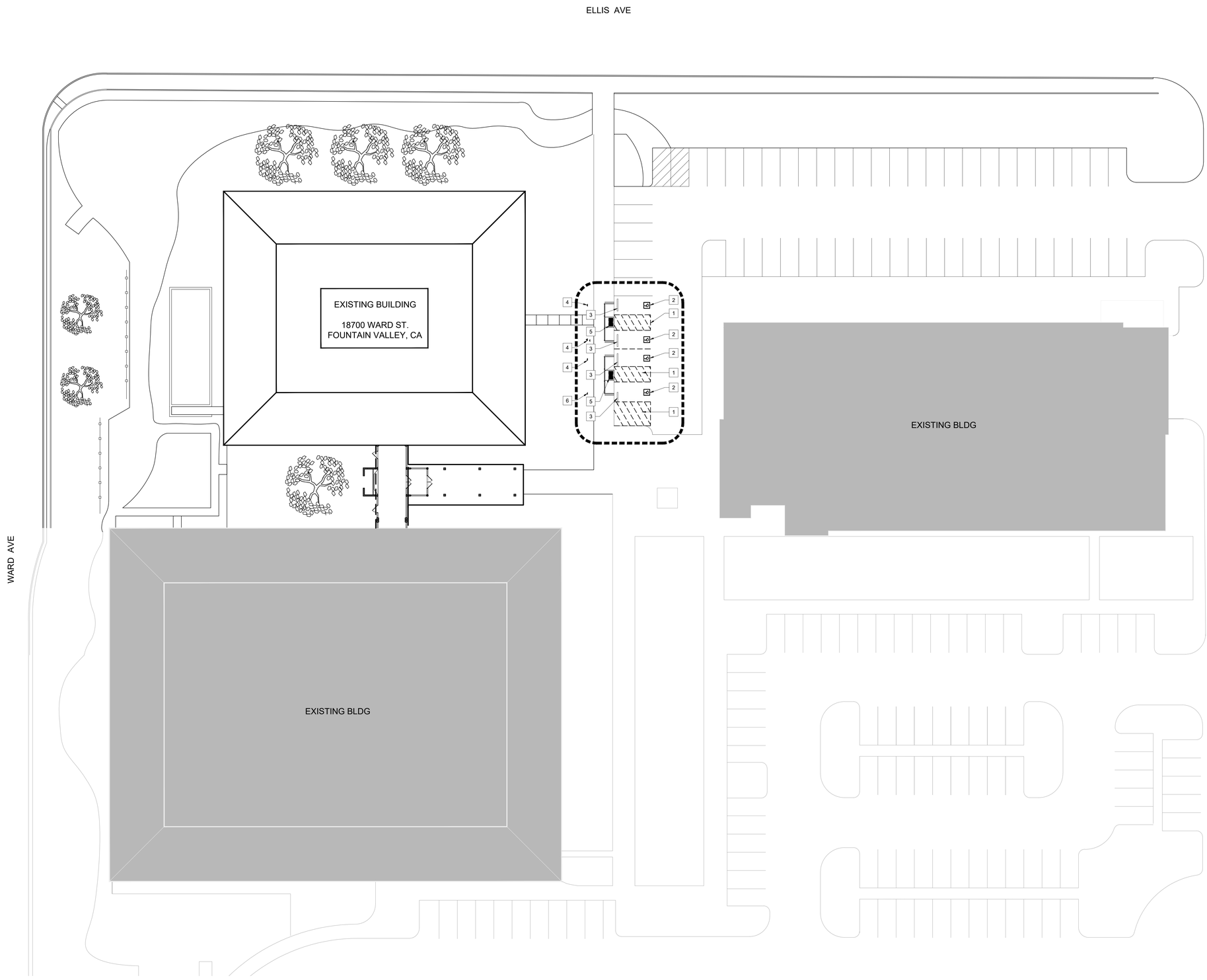
SHEET TITLE

EXIT & OCCUPANCY ANALYSIS

SHEET NUMBER

G-006

SHEET NO. OF



SITE DEMOLITION PLAN | 1" = 20' | 1

KEYNOTES

1. (E) PARKING LOT FLOOR MARKS TO BE REMOVED
2. (E) INTERNATIONAL SYMBOL OF ACCESSIBILITY TO BE REMOVED
3. (E) CONCRETE WHEEL STOP TO BE REMOVED FOR REUSE
4. (E) ACCESSIBILITY SIGN TO REMAIN
5. (E) TRUNCATED DOMES TO BE REMOVED
6. (E) ACCESSIBILITY SIGN TO BE REMOVED, POST TO REMAIN

GENERAL NOTES

- CONTRACTOR TO CLEAN ALL AREA OF THE PARKING LOT PAVEMENT AFTER WORK HAVE BEEN DONE

- THE DISCHARGE OF POLLUTANTS TO ANY STORM DRAINAGE SYSTEM IS PROHIBITED. NO SOLID WASTE PETROLEUM BYPRODUCTS, SOIL PARTICULATE, CONSTRUCTION WASTE MATERIALS OR WASTE WATER GENERATED ON CONSTRUCTION SITE OR BY CONSTRUCTION ACTIVITIES SHALL BE PLACED, CONVEYED OR DISCHARGE INTO THE STREET OR STORM DRAIN SYSTEM.

LEGEND

INDICATES THE AREA OF WORK/DEMOLITION

CLIENT

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FOUNTAIN VALLEY, CA 92708

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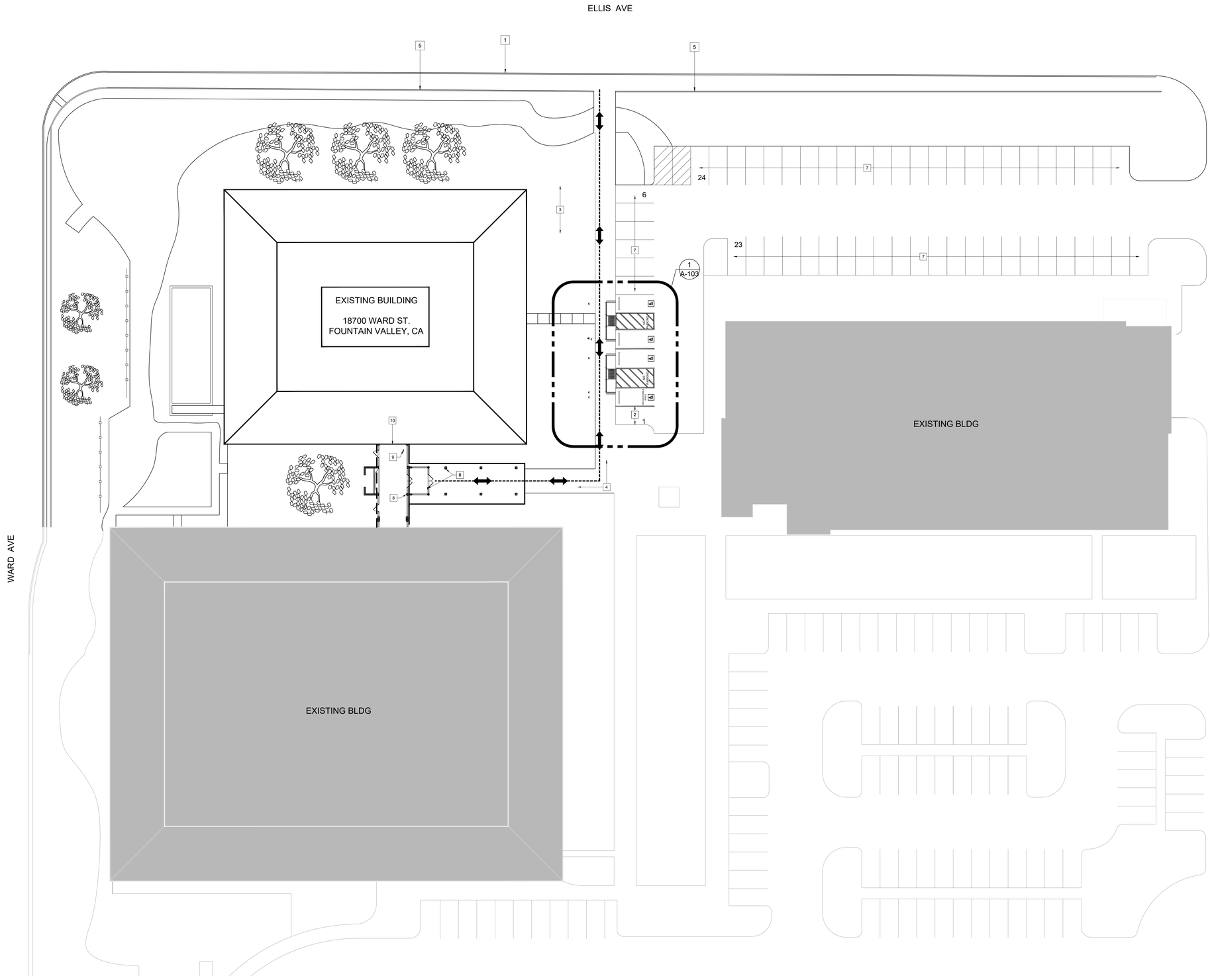
SHEET TITLE

DEMO SITE PLAN

SHEET NUMBER

A-101

SHEET NO. OF



KEYNOTES

1. (E) PUBLIC RIGHT OF WAY
2. EXISTING ACCESSIBLE PARKING SIGNAGE PER 2/G 005
3. EXISTING LANDSCAPE TO REMAIN
4. EXISTING WALKWAY TO REMAIN
5. EXISTING FENCE TO REMAIN
6. NOT USED
7. EXISTING PARKING
8. NEW PUSH PLATE TO BE ADDED; THE CENTERLINE OF NEW PUSH PLATE SHALL BE 7 INCHES MINIMUM AND 8 INCHES MAXIMUM ABOVE THE FLOOR; EACH PUSH PLATE SHALL BE MINIMUM 4 INCHES BY 4 INCHES SQUARE AND SHALL DISPLAY THE INTERNATIONAL SYMBOL OF ACCESSIBILITY COMPLYING WITH SECTION 11B-703.7.
9. REPLACE EXISTING NARROW PUSH PLATE POST W/ NEW CAREPRODX; CLEAR (SILVER) ALUMINUM 42" X 6" SQUARE DOUBLE PUSH PLATE BOLLARD
10. PROVIDE LIGHTING BATTERY BACKUP FOR POWERED DOOR. THE BACK-UP POWER SOURCE SHALL BE ABLE TO CYCLE THE DOOR A MINIMUM 100 CYCLE. SEE ELECTRICAL FOR MORE INFO.

CODE ANALYSIS

VEHICLE SPACE REQUIRED:

BUILDING AREA = 12,892 SQFT.
LAND USE TYPE: OFFICES, 1 SPACE FOR EACH 250 SQFT OF GROSS FLOOR ARAE (CITY OF FOUNTAIN VALLEY)

PARKING SPACE REQUIRED = 12,892 / 250 => 52 STALLS

ACCESSIBILITY PARKING REQUIREMENT (CBC-2016 TABLE 11B-208.2) 51 to 75 => 3 STALLS

VAN ACCESSIBILITY PARKING REQUIREMENT (CBC 2016- 11B-208.2.4) FORE EVERY 6 => 1 VAN STALL

LEGEND

INDICATES 44" MIN. ACCESSIBLE PATH OF TRAVEL WITH 5% SLOPE MAX. INDIRECTION OF TRAVEL & 2% CROSS SLOPE; CONTRACTOR SHALL VERIFY SLOPES AT PATH OF TRAVEL AND CORRECT SLOPES IF NEEDED

SITE NEW WORK PLAN | 1" = 20' | 1

CLIENT

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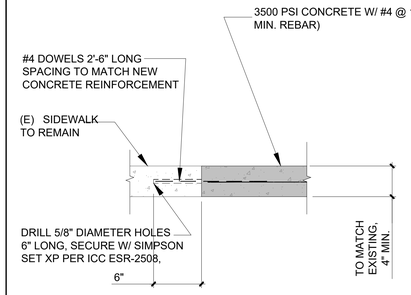
SHEET TITLE

NEW SITE PLAN

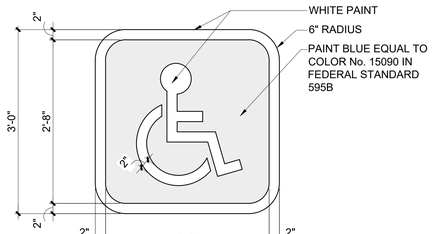
SHEET NUMBER

A-102

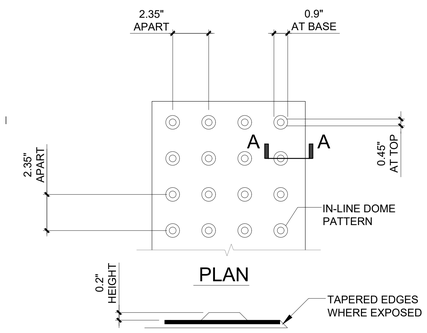
SHEET NO. OF



\- | - | - | DETAIL - NEW AND EXISTING SIDEWALK | 1" = 1'-0" | 12

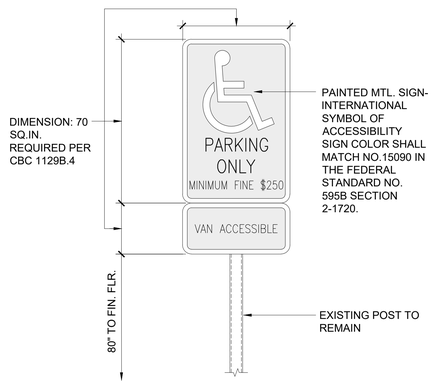


ACCESSIBILITY STALL SYMBOL | 1" = 1'-0" | 15

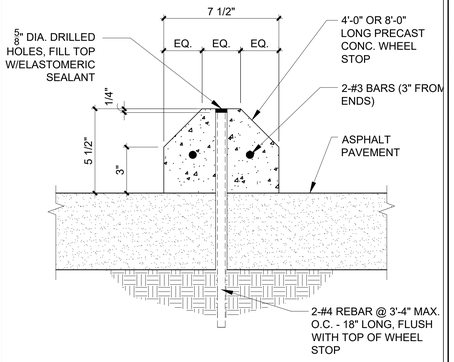


SECTION A - A

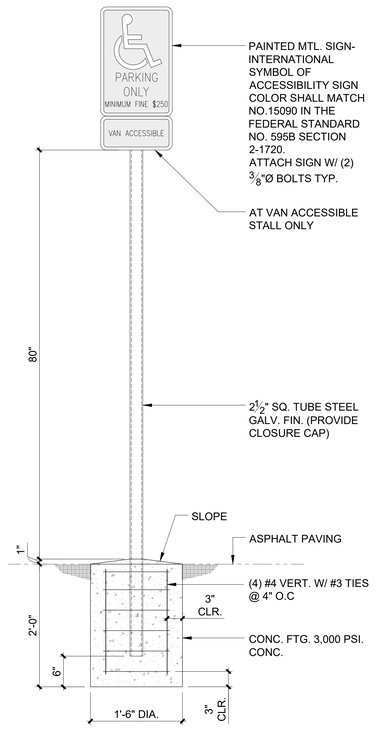
TRUNCATED DOMES | 3" = 1'-0" | 11



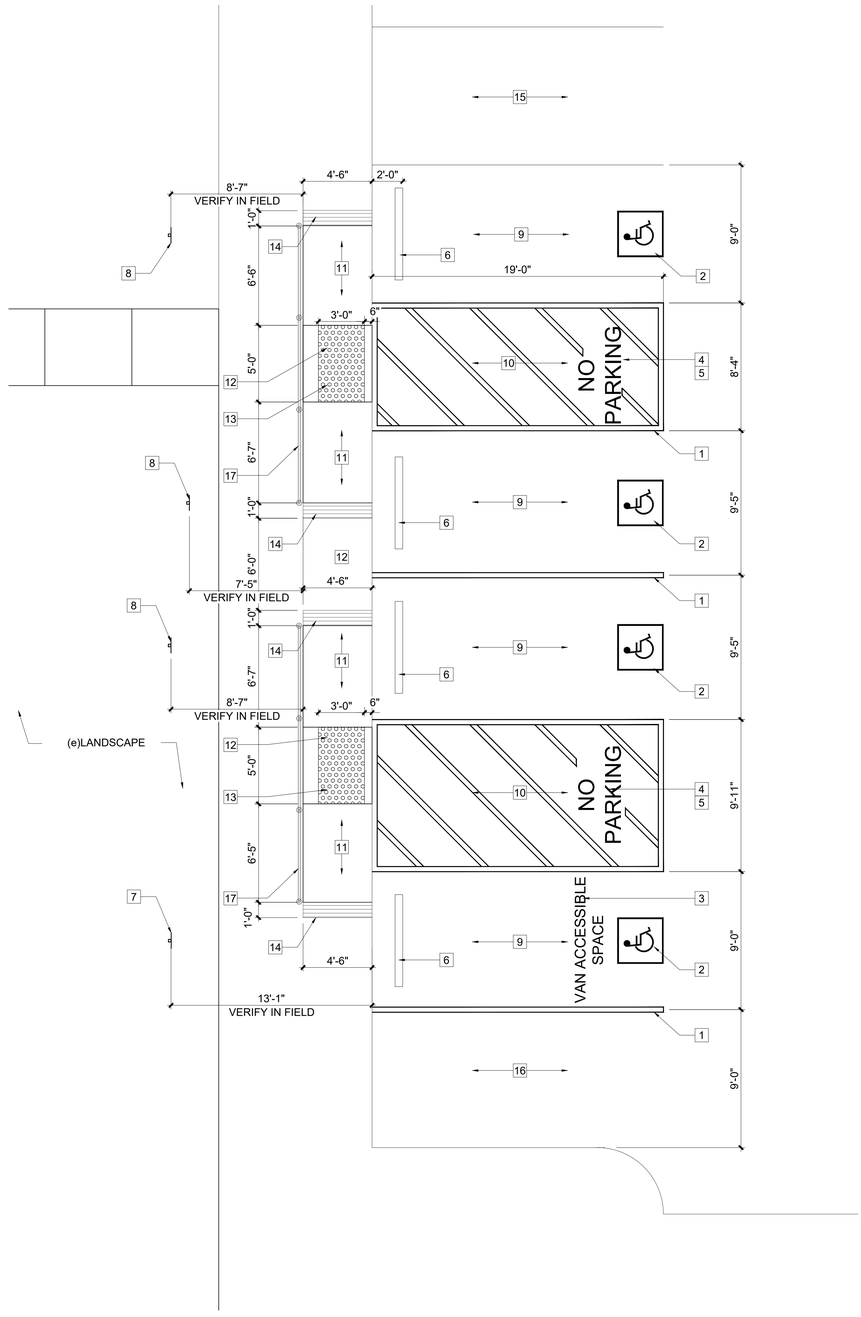
VAN ACCESSIBLE SIGN | 1" = 1'-0" | 14



WHEEL STOP | 3" = 1'-0" | 13



PARKING SIGN FOOTING | 1" = 1'-0" | 9



ENLARGED SITE NEW WORK PLAN | 1/4" = 1'-0" | 1

KEYNOTES

1. 4" WIDE MARKING
2. INTERNATIONAL SYMBOL OF ACCESSIBILITY, 36"x36", COLOR BLUE, SEE DETAIL 15/-
3. LETTERING "VAN ACCESSIBLE", COLOR WHITE
4. PARKING STALL MARKING SEE DETAIL 3/G005
5. LETTERING " NO PARKING", 12" MIN. HEIGHT, COLOR WHITE
6. CONCRETE WHEEL STOP, SEE DETAIL 13/-
7. IDENTIFICATION SIGN FOR ACCESSIBLE VAN PARKING, SEE DETAIL 9/A103 & 14/A103
8. EXISTING IDENTIFICATION SIGN FOR ACCESSIBLE PARKING TO REMAIN
9. ACCESSIBLE PARKING STALL, SLOPE IN ALL DIRECTION 1:48 MAX.
10. ACCESS AISLE SEE DETAIL 3/ G-005
11. (E) CONCRETE RAMP, SLOPE 1:12 MAX, AND CROSS SLOPE 1:48 MAX.
12. LEVEL LANDING AREA
13. TRUNCATED DOMES, SEE DETAIL 11/-, PROVIDE CONCRETE SUB-BASE PER DETAIL 12/-
14. DETECTABLE WARNING GROOVE
15. (E) PARKING STALL
16. PARKING STALL
17. (E) GUARD RAILING TO REMAIN

GENERAL NOTES

1. SEE SHEET G-005 FOR ADDITIONAL ACCESSIBILITY DETAILS
2. CONCRETE SPECIFICATIONS
   A. CONCRETE SIDEWALK SHALL BE 4" THICK
   B. FORM EDGES WITH NEAT TROWELED CORNER
   C. FC'=3,000 PSI MINIMUM; SUBMIT MIX DESIGN FOR REVIEW PRIOR TO CONSTRUCTION
   D. REINFORCE WITH #4 BARS AT 12" EACH WAY CENTERED IN THE SLAB
   E. PROVIDE $\frac{1}{4}$"X1" DEEP TROWELED CRACK CONTROL JOINT AT MAXIMUM SPACING OF 2X SLAB WIDTH; REINFORCING SHALL BE CONTINUOUS THROUGH JOINTS
   F. PROVIDE $\frac{1}{2}$" FULL DEPTH EXPANSION JOINT (NOMACO NOMAFLEX OR EQUAL WITH HIGH GRADE SEALANT INFILL AT $\frac{1}{2}$"X$\frac{1}{2}$" TOP VOID) AT SPACING NO GREATER THAN 3X SLAB WIDTH
   G. BROOM FINISH

CLIENT
MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT
IDS
IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
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SHEET TITLE
ENLARGED SITE PLAN

SHEET NUMBER
A-103

SHEET NO. OF

KEY NOTES

1
2
3
4

NOT USED

GENERAL NOTES

NOT USED

"CONSTRUCTION WORKING HOURS ARE 7AM-8PM, M-F, 9AM-9PM, SATURDAY, "NO WORK SUNDAY OR LEGAL HOLIDAYS"

PLAN REFLECTS IMPROVED CONDITIONS

NOT USED

PHASING METHODOLOGY:

- THE PREMISES WILL BE OCCUPIED DURING CONSTRUCTION:
  "CONSTRUCTION WORKING HOURS ARE 7AM-8PM, M-F, 9AM-9PM, SATURDAY, NO SUNDAY OR LEGAL HOLIDAYS"
- THE INTENT OF THE PHASING IS TO ALLOW PARTIAL OCCUPANCY OF THE BUILDING.
- PHASING SEQUENCING IS INTENDED FOR THE CONTRACTOR TO WORK AT ONE PHASE AT A TIME, ALLOWING STAFF TO OCCUPY THE REST OF THE BUILDING.
- PHASING SEQUENCE:
  PHASE 0 - INTENDED FOR PREPARATION OF ELECTRICAL NEEDS DURING EACH PHASE - SEE PLAN (ELECTRICAL ROOM)
  PHASE 1 - SEE PLAN
  PHASE 2 - SEE PLAN
  PHASE 3 - SEE PLAN
  PHASE 4 - SEE PLAN
- CONTRACTOR SHALL PROVIDE CONSTRUCTION PHASING BASED ON THE PROPOSED SEQUENCING (PLAN) ON THIS SHEET & CONSTRUCTION COSTING FOR EACH PHASE.
- IMMEDIATELY AFTER AWARD, CONTRACTOR SHALL SUBMIT PHASING SCHEDULE IN ACCORDANCE TO THE SEQUENCING PROVIDED ON THIS SHEET FOR MWDOC APPROVAL.
- CONTRACTOR SHALL ALLOT AREAS OF STAFF RELOCATION FOR EACH PHASE AND SHALL MAINTAIN NECESSARY ACCOMMODATION REQUIRED FOR UNINTERRUPTED DAILY STAFF ROUTINES AND BUSINESS SUCH AS COMPUTERS, PHONE LINES, DATA, PRINTING MACHINES, AND OTHERS.
- UPON COMPLETION OF EACH PHASE, CONTRACTOR SHALL ALLOW TIME FOR STAFF TO VACATE THE NEXT PHASE FOR CONSTRUCTION AND RELOCATE TO THE COMPLETED PHASE AREA.
- PRESENT ANY ISSUE ON EACH PHASING AND PROVIDE POSSIBLE SOLUTIONS AND RECOMMENDATIONS.

LEGEND

- PHASE 0 - ELECTRICAL
- PHASE 1
- PHASE 2
- PHASE 3

NOTE:
PHASING PLAN REFLECTS PROPOSED NEW FLOOR LAYOUT AND IMPROVED CONDITIONS.

SEISMIC AND TENANT IMPROVING PHASING PLAN | 3/16" = 1'-0" | 1

CLIENT

MWDOC

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ENGINEER/ARCHITECT

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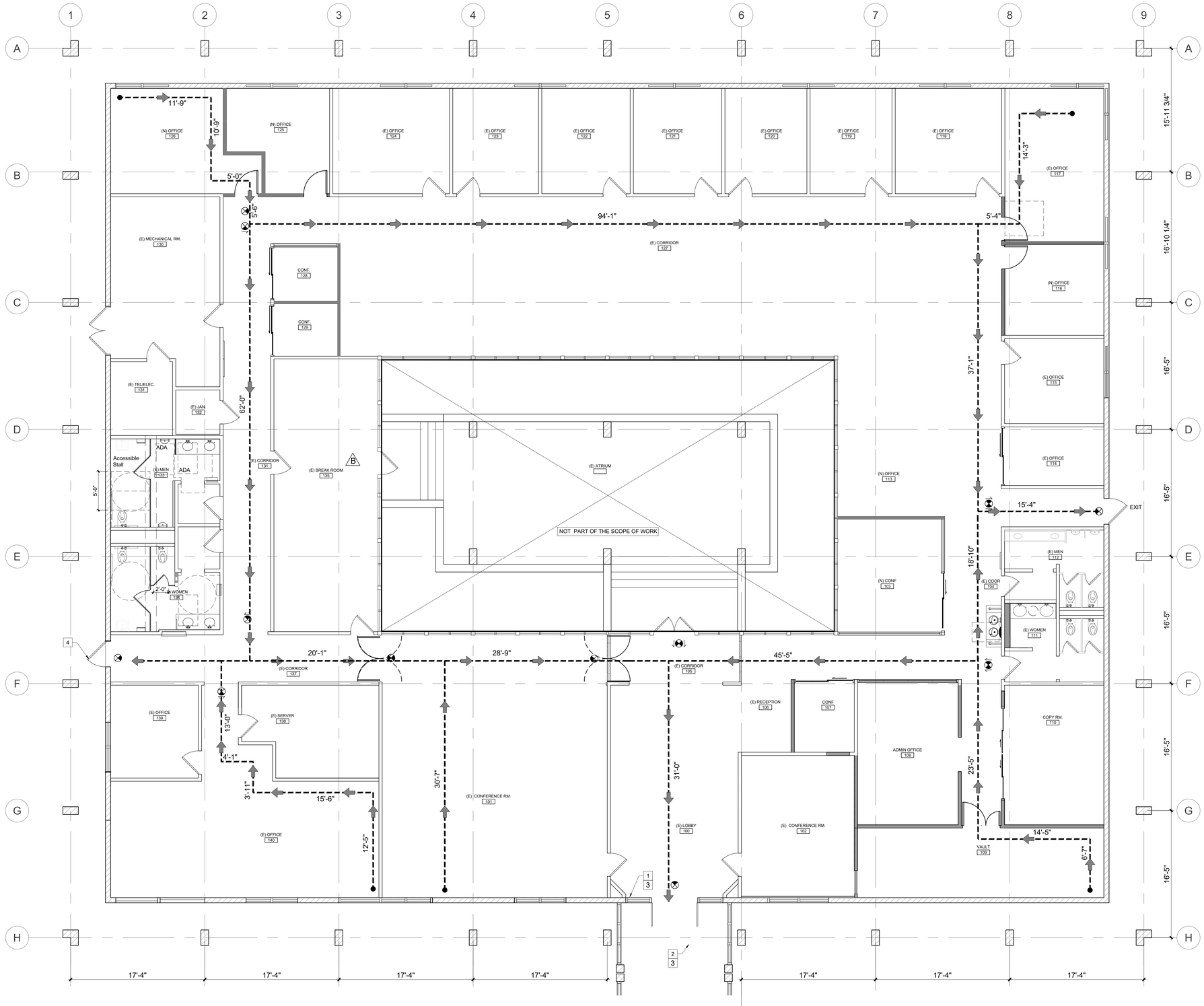
SHEET TITLE

PROPOSED PHASING PLAN

SHEET NUMBER

A-104

SHEET NO. OF



KEYNOTES

1. (E) PUSH PLATE TO REMAIN; NEW PUSH PLATE TO BE ADDED; THE CENTERLINE OF NEW PUSH PLATE SHALL BE 7 INCHES MINIMUM AND 8 INCHES MAXIMUM ABOVE THE FLOOR; EACH PUSH PLATE SHALL BE MINIMUM 4 INCHES BY 4 INCHES SQUARE AND SHALL DISPLAY THE INTERNATIONAL SYMBOL OF ACCESSIBILITY COMPLYING WITH SECTION 11B-703.7.
2. REPLACE EXISTING NARROW PUSH PLATE POST W/ NEW CAREPRODX; CLEAR (SILVER) ALUMINUM 42" X 6" SQUARE DOUBLE PUSH PLATE BOLLARD
3. PROVIDE BACK-UP BATTERY OR BACK-UP GENERATOR FOR POWERED DOOR. THE BACK-UP POWER SOURCE SHALL BE ABLE TO CYCLE THE DOOR A MINIMUM 100 CYCLE. SEE ELECTRICAL FOR ADDITIONAL REQUIREMENTS.
4. NOT AN EMERGENCY EXIT DOOR

CODE REQUIREMENTS

MAXIMUM TRAVEL DISTANCE:

MAXIMUM TRAVEL DISTANCE TO EXITS FOR A B OCCUPANCY FULLY SPRINKLERED BUILDING (CBC 2016 1017.2): 300'-0"

EXIT CALCULATION PER CBC TABLE 1015.1
2 EXITS REQUIRED (OVER 49 OCCUPANTS)

MAXIMUM DIAGONAL DISTANCE 165'- 6"
MAXIMUM DISTANCE BETWEEN EXITS FOR FULL SPRINKLERED BUILDING = 74'- 7" PROVIDED

OCCUPANCY	Sq.ft.	O.L
GROUP 'B' - OCCUPANCY	6,049 Sq.ft.	76
GROUP 'A' - OCCUPANCY	1,540 Sq.ft.	104
RESTROOMS	556 Sq.ft.	
JANITOR ROOM	36 Sq.ft.	
ELECTRICAL ROOM	75 Sq.ft.	
CIRCULATION AREA	2,132 Sq.ft.	

180 OCCUPANTS

LEGEND

- EXISTING DOOR
- NEW DOOR
- EXISTING WALL
- EXISTING EXTERIOR WALL
- NEW WALL
- 100 ROOM NUMBER
- XX PARTITION TYPE
- 101A DOOR TAG

LIFE SAFETY PLAN | 3/16" = 1'-0" | 1

CLIENT
MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT
IDS
IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

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REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
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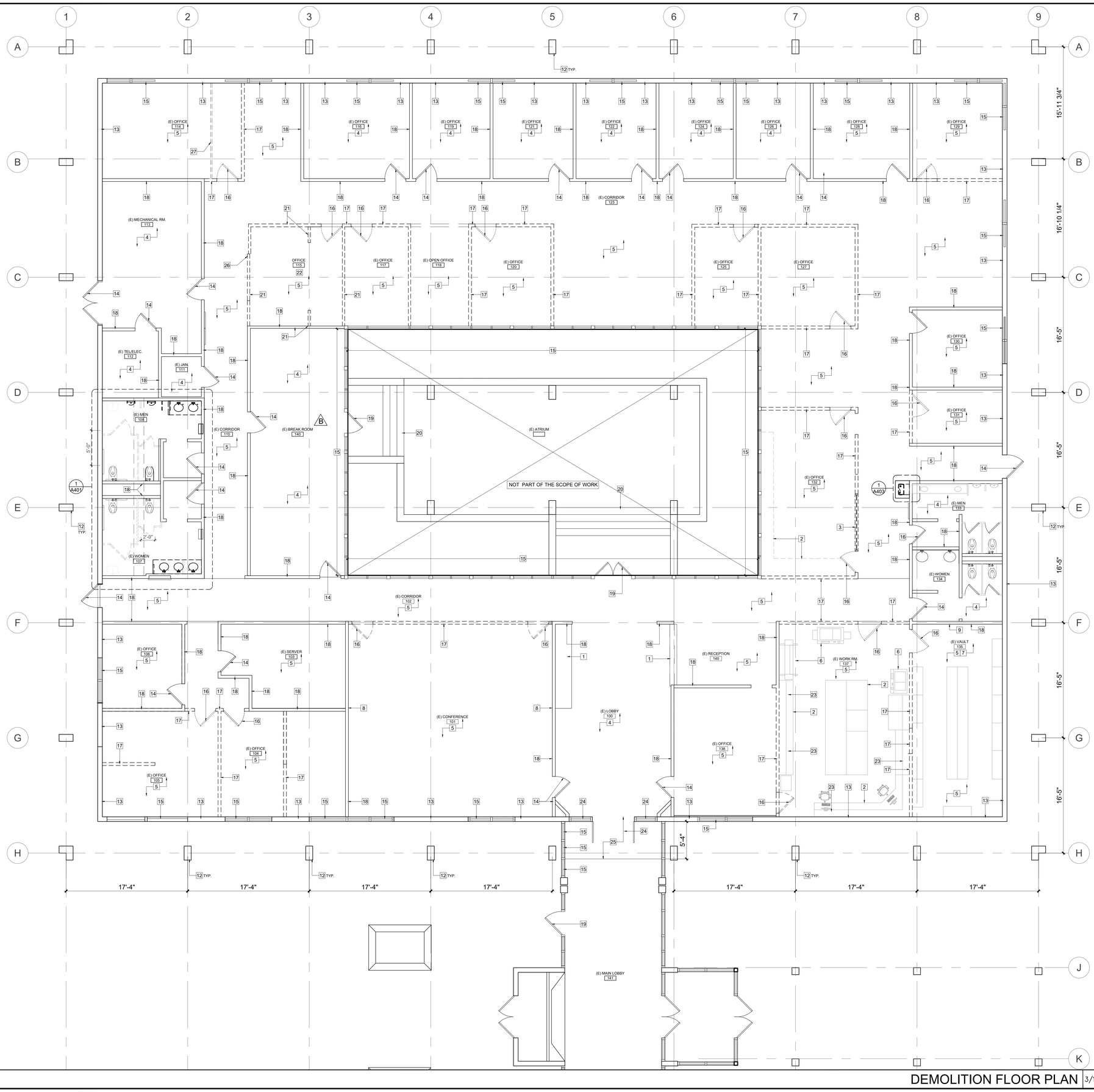
SHEET TITLE
LIFE SAFETY PLAN

SHEET NUMBER
A-105

SHEET NO. OF



DEMOLITION FLOOR PLAN 3/16"=1'-0" 1

KEYNOTES

1. EXISTING MILLWORK TO REMAIN. PROTECT IN PLACE.
2. DEMOLISH EXISTING MILLWORK
3. DEMOLISH EXISTING GLAZING/WINDOW.
4. EXISTING FLOOR FINISH TO REMAIN. PROTECT IN PLACE.
5. DEMOLISH EXISTING FLOOR FINISH
6. REMOVE EXISTING PRINTER. SAVE FOR RELOCATION
7. REMOVE EXISTING VAULT SHELVING. SAVE FOR RELOCATION
8. REMOVE EXISTING ACOUSTICAL BAFFLES FROM WALL
9. REMOVE EXISTING KEY CABINET AND SAVE FOR RELOCATION
10. NOT USED
11. SAW-CUT PORTION OF (E) CONCRETE SLAB TO ACCOMMODATE (N) 6" HIGH CONCRETE CURB AND WALL FOOTING. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. (NOTE: CONTRACTOR TO VERIFY EXISTING CONDITION PRIOR TO COMMENCE WITH THE DEMOLITION.)
12. (E) BRICK VENEER COLUMN TO REMAIN PROTECT-IN-PLACE, TYP.
13. (E) CONCRETE MASONRY WALL TO REMAIN PROTECT-IN-PLACE, TYP.
14. EXISTING DOOR AND FRAME TO REMAIN PROTECT-IN-PLACE, TYP.
15. (E) STOREFRONT WINDOW SYSTEM TO REMAIN, PROTECT-IN-PLACE, TYP. (V.I.F.)
16. REMOVE EXISTING DOOR AND FRAME COMPLETE, TYP.
17. REMOVE EXISTING STUD WALL AND FINISHES TYP.
18. EXISTING STUD WALL AND FINISHES TO REMAIN, PROTECT-IN-PLACE, TYP.
19. EXISTING STOREFRONT SYSTEM DOOR AND FRAME TO REMAIN, PROTECT-IN-PLACE, TYP.
20. EXISTING STAIRS TO REMAIN, PROTECT-IN-PLACE, V.I.F.
21. REMOVE EXISTING MASONRY WALL AND FINISHES.
22. REMOVE EXISTING 6" CONCRETE CEILING
23. EXISTING SOFFIT TO BE DEMOLISHED
24. EXISTING STOREFRONT DOOR AND SIDELITES TO BE REMOVED, PROTECT SILL AND HEADWALL IN PLACE.
25. EXISTING TILE FLOORING TO BE REMOVED AND PREPARED FOR INSTALLATION OF NEW TILE FLOORING.
26. REMOVE EXISTING UTILITY BOX AND ALL ASSOCIATED CONDUIT AND WIRING.
27. REMOVE 3X9 RAFTER THAT IS NOT CARRYING LOAD.

LEGEND

- DOOR TO BE DEMOLISHED
- EXISTING DOOR TO REMAIN
- EXISTING EXTERIOR WALL
- EXISTING WALL TO REMAIN
- WALL TO BE DEMOLISHED
- 100 ROOM NUMBER

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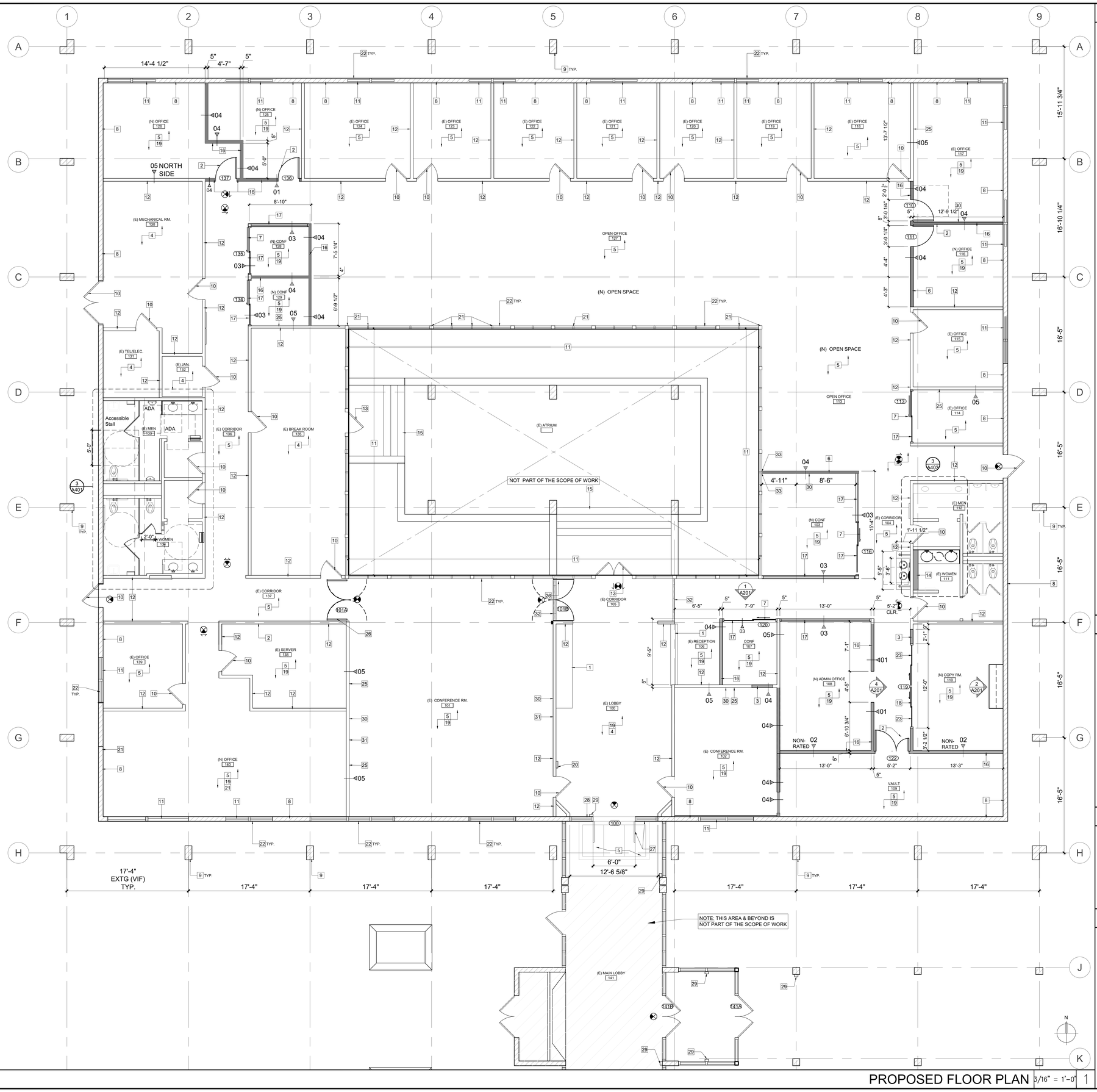
SHEET TITLE

DEMOLITION FLOOR PLAN

SHEET NUMBER

A-106

SHEET NO. OF



PROPOSED FLOOR PLAN 3/16" = 1'-0" 1

KEYNOTES

1. EXISTING MILLWORK TO REMAIN. PROTECT IN PLACE.
2. (N) HOLLOW CORE DOOR AND METAL FRAME REFER TO DOOR SCHEDULE
3. (N) WALL IN-FILL. SEE 8/400a
4. EXISTING FLOOR FINISH TO REMAIN. PROTECT-IN-PLACE, TYP.
5. (N) FLOOR FINISH, SEE FINISH SCHEDULE, TYP.
6. (N) 6" METAL STUDS @ 16" O.C. WITH 5/8" THK. TYPE "X" GYPSUM BOARD, PAINT FINISH, TYP.
7. (N) SINGLE SLIDER GLASS DOOR
8. (E) CONCRETE MASONRY WALL TO REMAIN PROTECT-IN-PLACE, TYP.
9. (E) BRICK VENEER COLUMN TO REMAIN PROTECT-IN-PLACE, TYP.
10. EXISTING DOOR AND FRAME TO REMAIN PROTECT-IN-PLACE, TYP.
11. (E) STOREFRONT WINDOW SYSTEM TO REMAIN, PROTECT-IN-PLACE, TYP. (V.I.F.)
12. EXISTING STUD WALL AND FINISHES TO REMAIN, PROTECT-IN-PLACE, U.N.O. AS NOTED ON A-111.
13. EXISTING STOREFRONT SYSTEM DOOR AND FRAME TO REMAIN, PROTECT-IN-PLACE, TYP.
14. (N) FURRED WALL, SEE DETAIL #1&5/A-501.
15. EXISTING STAIRS TO REMAIN, V.I.F.
16. (N) 4" METAL STUDS @ 16" O.C. WITH 5/8" THK. TYPE "X" GYPSUM BOARD, PAINT FINISH, TYP.
17. (N) GLASS WALL AND DOORS BY OTHERS
18. (N) DOUBLE SLIDER GLASS DOOR
19. MODIFIED ROOM TO RECEIVE (N) CASEWORK
20. OCCUPANT LOAD SIGNAGE LOCATION
21. PATCH AND REPAIR MULLION DAMAGE AT INTERSECTING DEMO WALLS, TYP. (9 LOCATIONS)
22. INSTALL FRAGMENT RETENTION FILM ON ALL EXISTING WINDOWS.
23. GLASS WALLS AND DOORS. SEE 4/A-201
24. PAINT ALL DOORS AND DOOR JAMBS
25. MODIFY THIS SIDE OF EXISTING WALL TO PROVIDE SOUND INSULATION PER PARTITION LEGEND
26. GLASS DOORS PER SCHEDULE ON A-201
27. (N)RATED STOREFRONT, GLASS AND DOORS PER SCHEDULE ON A-201
28. (N) 1-HR RATED SIDELITES. VERIFY THE EXISTING HEAD WALL ABOVE DOORS AND SIDELITES IS 1-HOUR FIRE RATED WITH RATED CONDITION EXTENDING AT LEAST 5'-0" ON EACH SIDE OF THE WALL AT THE UNDERSIDE OF THE STRUCTURE.
29. POWER ASSIST DOOR ACTIVATORS, WALL AND BOLLARD MOUNTED AS REQUIRED.
30. BACKING FOR TELEVISION INSTALLATION, CENTERED ON WALL, SEE DETAIL 14/A-505.
31. INSTALL CHAIR RAIL PER OWNER'S SELECTION.
32. GRIND SLAB TO PROVIDE LEVEL SURFACE, SET TILE INSET AS SHOWN AND INSTALL SCHLUTER STRIP TO TRANSITION TO CARPET
33. PROVIDE CONTINUOUS "L" METAL TO CLOSE GAP BETWEEN WALL AND STOREFRONT, PAINT TO MATCH (E) MULLION.

GENERAL NOTES

1. SEE SHEET A-201 FOR DOOR SCHEDULE
2. MATCH EXISTING MATERIALS AND FINISH.
3. CONTRACTOR TO MAINTAIN EMERGENCY EXIT IN ALL PHASES OF CONSTRUCTION
4. INFILL EXISTING OPENING. PLASTER, SAND, & PAINT. FINISH TO MATCH ADJACENT EXISTING SURFACE FINISH.
5. PATCH & FINISH ALL EXPOSED FLOORING TO MATCH EXISTING FINISH LEVEL AND MATERIAL, TYP.
6. ALL EXISTING KEY CABINET, CASEWORK TO REMAIN/RELOCATED AND PROTECT-IN-PLACE AT ALL TIMES, V.I.F.
7. REPAIR, PATCH, SAND & PAINT FINISH WALLS DAMAGED DUE TO DEMOLITION. REMOVAL OF FIXTURES, PANELS, AND OTHER BUILDING COMPONENTS. FINISH TO MATCH ADJACENT EXISTING & NEW WALLS
8. EXISTING CASEWORK TO REMAIN. PROTECT-IN-PLACE

PARTITION LEGEND

401	NEW METAL STUD WALL WITH ONE LAYER 5/8" GYP. BD. EACH SIDE
402	ONE (1) HOUR RATED WALL WITH METAL STUDS AND ONE LAYER 5/8" TYPE 'X' GYP. BD. EACH SIDE, TO UNDERSIDE OF ROOF.
403	GLASS PARTITION 1/2" TEMPERED GLASS
404	HEIGHT UP TO THE UNDERSIDE OF ROOF. SOUND ATTENUATED WALL. SEE DETAIL 2/A501
405	EXISTING WALL, MODIFY TO BE SOUND ATTENUATED. SEE DETAIL 2/A501 (NOTE)

LEGEND

- EXISTING DOOR TO REMAIN (PROTECT-IN-PLACE)
- NEW DOOR
- NEW SLIDING DOOR
- EXISTING WALL
- EXISTING EXTERIOR WALL
- NEW WALL
- 100 ROOM NUMBER
- 104A WINDOW TAG
- 101A DOOR TAG

CLIENT

MWDOC

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MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

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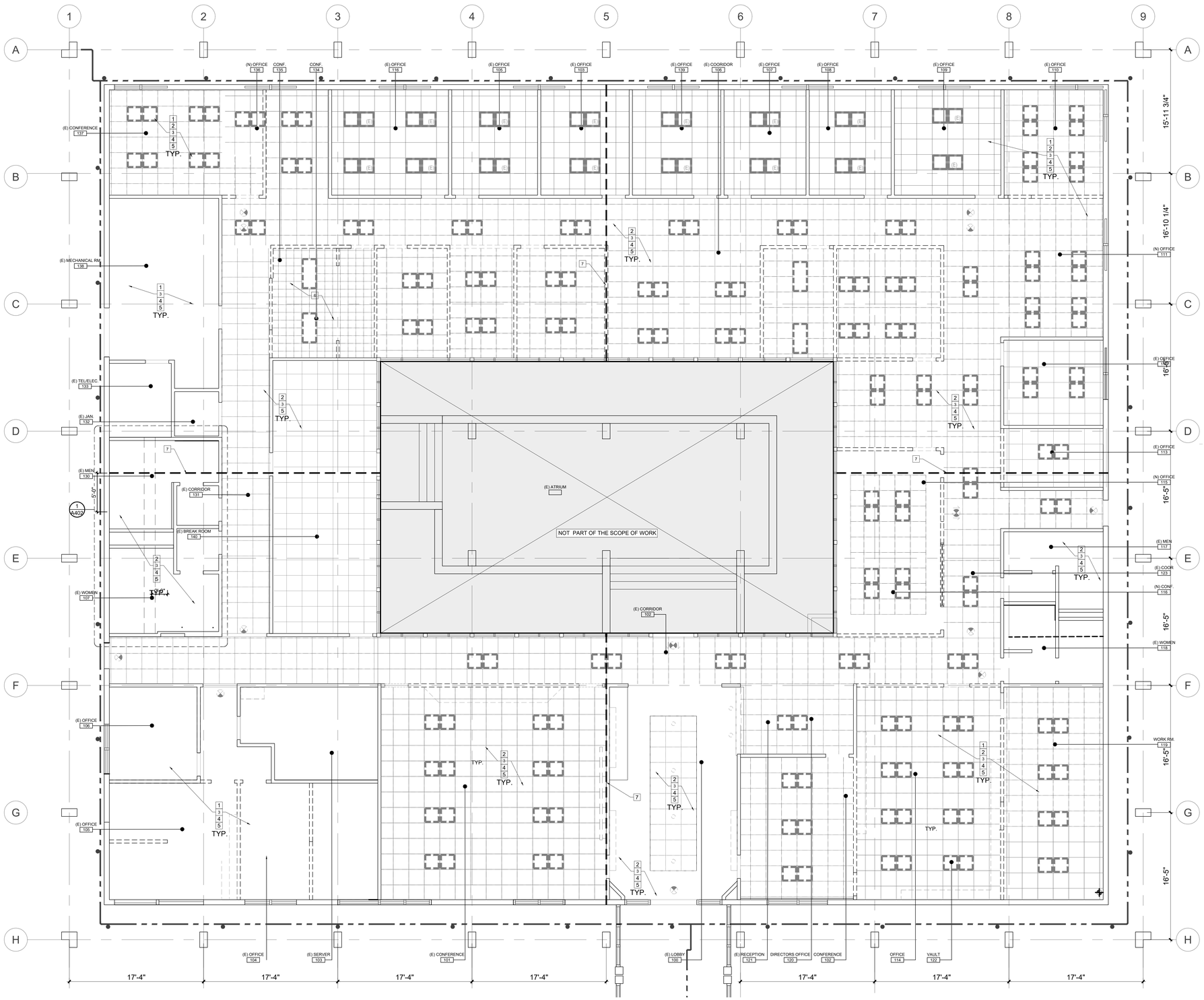
SHEET TITLE

PROPOSED FLOOR PLAN

SHEET NUMBER

A-107

SHEET NO. OF



REFLECTECTED CEILING DEMOLITION PLAN | 3/16" = 1'-0" | 1

GENERAL NOTES

1. REFER TO STRUCTURAL DRAWINGS FOR LOCATION AND TYPE OF SEISMIC BRACING.

2. CONTRACTOR TO SALVAGE (E) CEILING TILE. STORE AND PROECT FOR RE-USE.

3. CONTRACTOR'S RESPONSIBILITIES TO DEMOLISH SELECTIVE AREAS OF CEILING APPROVED BY ARCHITECT OF RECORDS (AOR) & STRUCTURAL ENGINEER OF RECORDS (SEOR)

4. CONTRACTOR TO VERIFY ON SITE, CEILING & GRID SUPPORTS TO BE DEMOLISHED DUE TO SEISMIC BRACING.

5. REFER TO STRUCTURAL DRAWINGS FOR EXTERIOR CEILING AFFECTED BY SEISMIC BRACING.

KEYNOTES

1. EXISTING GYPSUM BOARD CEILING TO BE DEMOLISHED, FOR SEISMIC BRACING INSTALLATION, REPLACE ALL DEMOLISHED AREA WITH NEW CEILING AND CEILING SUPPORTS.
2. EXISTING LAY-IN CEILING, REMOVE CEILING TILES AS NECESSARY FOR FOR SEISMIC BRACING INSTALLATION. REPLACE ANY DAMAGED OR WORN CEILING TILES WITH NEW AND REPLACE ALL CEILING GRID SUPPORTS WITH NEW.
3. SEE ELECTRICAL DWGS FOR EXISTING LIGHT FIXTURES REMOVAL.
4. (E) FIRE SPINKLERS REFER TO FIRE PROTECTION SET.
5. PATCH AND REPAIR ALL DAMAGED WALLS INTERSECTING EXISTING CEILING AND CEILING GRID SUPPORTS TO BE DMOLISHED AND REPLACED.
6. REMOVED EXISTING 6" CONCRETE CEILING
7. (E) EXISTING ATTIC SEPARATION WALL TO REMAIN. REFER TO AS-BUILT DRAWINGS FOR EXACT LOCATION OR VERIFY IN FIELD.

LEGEND

- EXISTING WALL REMAINING
- EXISTING WALL TO BE REMOVED
- N.I.C. AREA

CLIENT

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FOUNTAIN VALLEY, CA 92708

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ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

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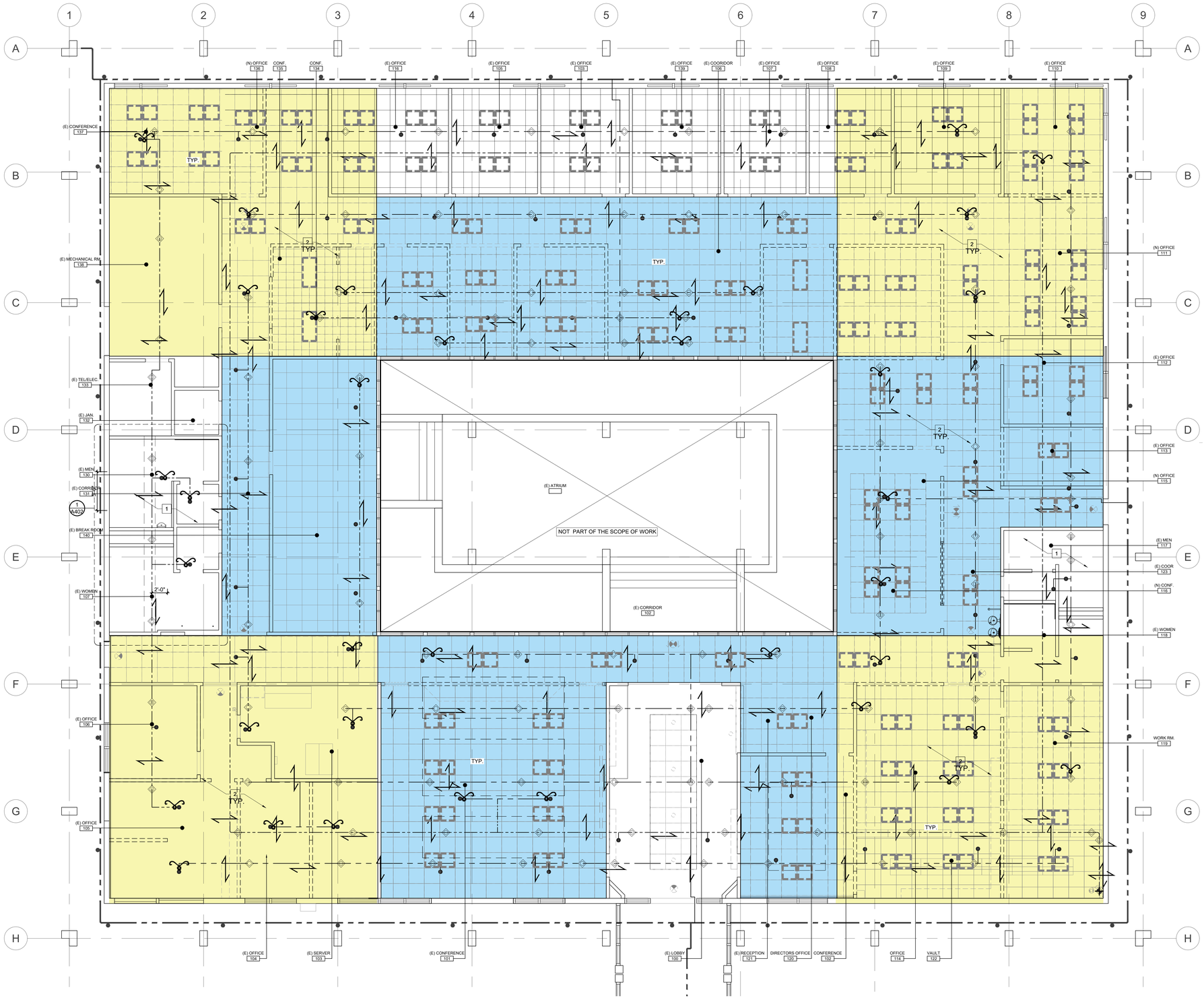
SHEET TITLE

REFLECTED CEILING DEMOLITION PLAN

SHEET NUMBER

A-108

SHEET NO. OF



REFLECTECTED CEILING DEMOLITION PLAN - SEISMIC RETROFIT | 3/16" = 1'-0" | 1

GENERAL NOTES

1. REFER TO STRUCTURAL DRAWINGS FOR LOCATION AND TYPE OF SEISMIC BRACING.

2. CONTRACTOR TO VERIFY ON SITE CEILING TO BE DEMOLISHED DUE TO SEISMIC BRACING.

4. REFER TO STRUCTURAL DRAWINGS FOR EXTERIOR CEILING AFFECTED BY STRUCTURAL BRACING

KEYNOTES

1. (E) GYPSUM BOARD CEILING SEE REFLECTED CEILING DEMOLITION PLAN
2. (E) LAY-IN CEILING SEE REFLECTED CEILING DEMOLITION PLAN

LEGEND

- INDICATES AREA OF DEMOLITION FOR SEISMIC RETROFIT OF BUILDING MAIN STRUCTURE-SEE STRUCTURAL DRAWINGS
- INDICATES AREA OF DEMOLITION FOR SEISMIC SUPPORT OF THE FIRE SPRINKLER SYSTEM-SEE MECHANICAL DRAWINGS
- INDICATES (E) PIPE HANGER
- INDICATES (E) FIRE SPRINKLER HEAD
- INDICATES NEW BRACE LOCATION
- INDICATES LINE RESTRAINT WITH SPLAY WIRE. SURGE RESTRAINER, RING HANGER, HANGER ROD AND BEAM CONNECTION ASSEMBLY. SEE DETAIL 15/SS5.3

CLIENT

MWDOC

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FOUNTAIN VALLEY, CA 92708

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ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

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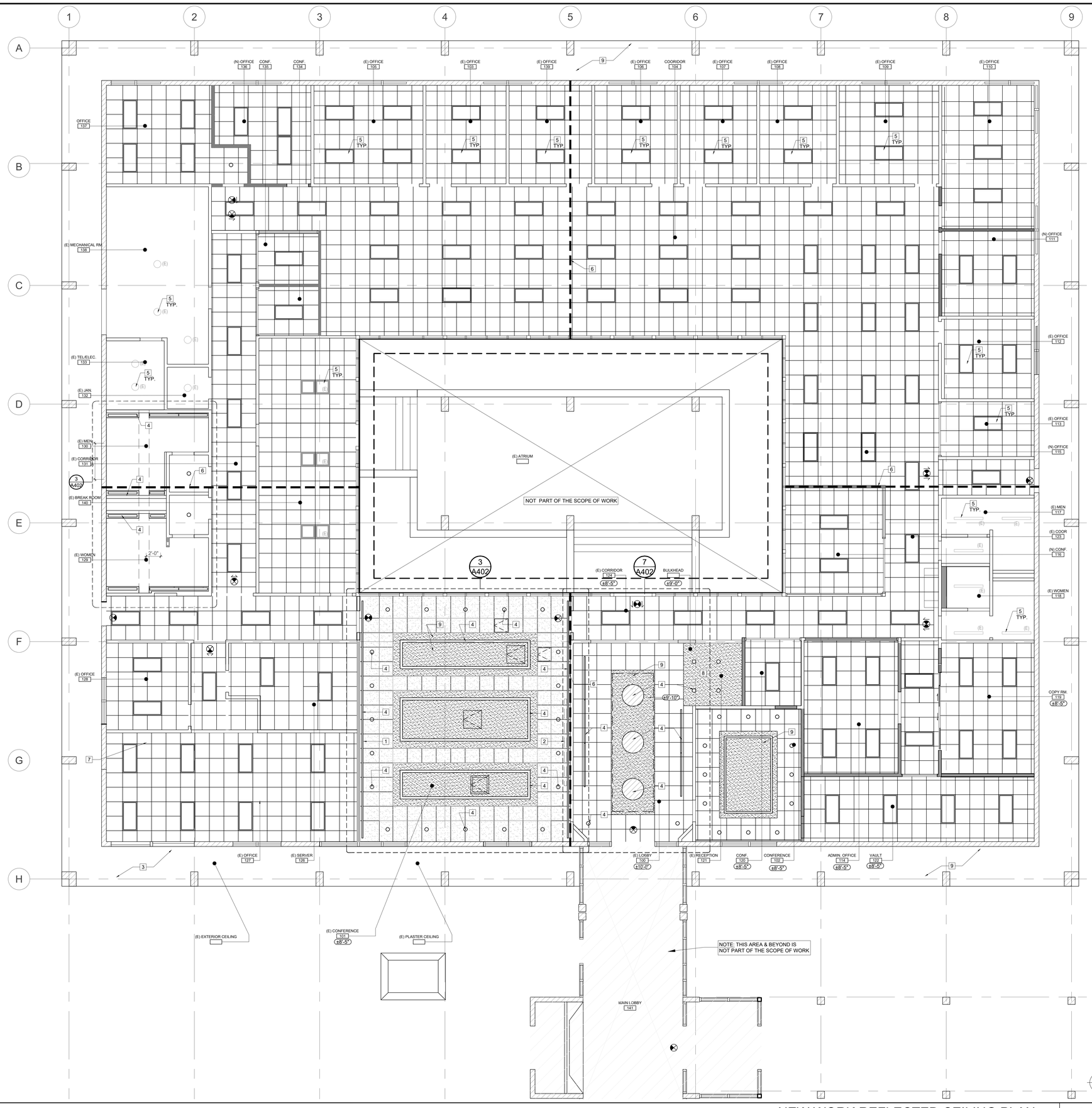
SHEET TITLE

REFLECTED CEILING DEMOLITION PLAN - SEISMIC RETROFIT

SHEET NUMBER

A-108.1

SHEET NO. OF



NEW WORK REFLECTED CEILING PLAN | 3/16"=1'-0" | 1

GENERAL NOTES

1. EXISTING CEILING HEIGHTS TO REMAIN UNLESS NOTED. CONTRACTOR TO VERIFY EXACT HEIGHT ON SITE.

2. REFER TO ELECTRICAL DRAWINGS ON EMERGENCY LIGHTING.

3. REFER TO MECHANICAL DRAWINGS FOR AIR DIFFUSER & AIR RETURN GRILL LOCATIONS.

4. REFER TO ELECTRICAL DRAWINGS FOR NEW LIGHT FIXTURES AND INFORMATION.

5. PATCH AND REPAIR EXISTING GYPSUM BOARD CEILING AT INTERSECTING DEMO WALLS.

6. REPLACE LIGHTING FIXTURES WITH NEW UNLESS NOTED ON THIS REFLECTED CEILING PLAN. REFER TO ELECTRICAL DRAWINGS FOR COORDINATION.

7. CONTRACTOR TO VERIFY EXISTING EXTERIOR LIGHTING IN FIELD. AFFECTED LIGHTING TO BE REMOVED DUE TO BRACING SHALL BE INSTALLED BACK AND CONNECT TO ITS EXISTING CIRCUIT. REFER TO ELECTRICAL DRAWINGS.

8. CONTRACTORS' RESPONSIBILITY IS TO INSTALL NEW CEILING GRID SUPPORTS TO ALL AFFECTED AREAS OF DEMOLITION AND TO RE-INSTALL CEILING TILES THAT ARE WITHOUT DAMAGE AND IN GOOD CONDITION AS NEW.

9. PROTECT ALL EXISTING LIGHTING FIXTURES THAT ARE TO REMAIN. REMOVE FIXTURES DURING SEISMIC BRACING, PROTECT, AND REINSTALL AS SHOWN ON THIS PLAN. REFER TO ELECTRICAL DRAWINGS FOR EXISTING CIRCUITRY.

10. ALL LIGHT FIXTURES ARE NEW UNLESS NOTED AS (D) TO BE DEMOLISHED OR (E) EXISTING TO REMAIN. REFER TO ELECTRICAL DRAWINGS FOR INFORMATION.

KEYNOTES

1. NEW PROJECTION SCREEN
2. RELOCATED PROJECTION SCREEN
3. REPAIR ALL AFFECTED EXISTING EXTERIOR CEILING TO MATCH EXISTING ADJACENT.
4. NEW LIGHT FIXTURES, REFER TO ELECTRICAL DRAWINGS, TYP.
5. EXISTING LIGHT FIXTURE TO REMAIN.
6. (E) ATTIC SEPARATION WALLS TO REMAIN. REFER TO AS-BUILT DRAWING FOR LOCATION
7. REFER TO NOTE 8 ABOVE, TYPICAL.
8. PAINT GYP BOARD CEILING AND SOFFIT FACE PT-1 TO MATCH WALLS.
9. PAINT GYP BOARD CEILING AREA USING DUNN EDWARDS DEW380 WHITE IN EGGSHELL FINISH.

LEGEND

- EXISTING WALL
- NEW WALL
- EXISTING EXTERIOR WALL
- DEMO WALL
- ± ### CEILING HEIGHT
- NEW RECESSED LIGHTING FIXTURE
- NEW RECESSED LIGHT FIXTURE
- NEW 2X4 LIGHTING FIXTURE
- NEW CEILING GRID & TILES, EXISTING TO BE REUSED ONLY IF IN GOOD CONDITION AND AS APPROVED BY OWNER.
- NEW GYPSUM BOARD CEILING
- ARMSTRONG LYRA PB DIRECT APPLY ACOUSTICAL CEILING PANELS, WHITE PAINTED L METAL AT OUTSIDE CORNERS.

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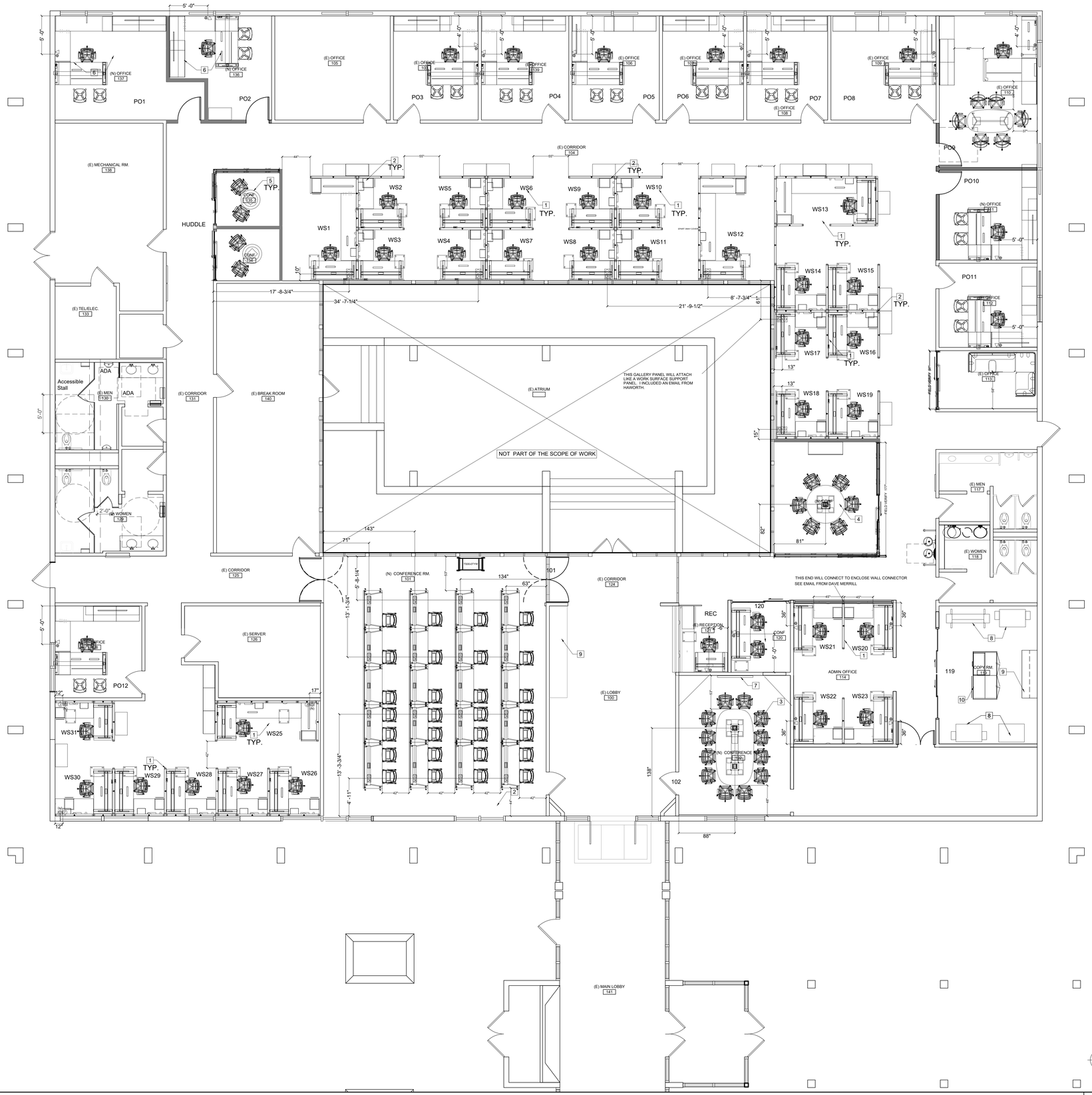
SHEET TITLE

NEW WORK REFLECTED CEILING PLAN

SHEET NUMBER

A-109

SHEET NO. OF



KEYNOTES

1. NEW OPEN SPACE CUBICLES & CABINETS/DRAWERS BY OWNER. REFER FOR LAYOUT ON THIS PLAN
2. NEW MOVABLE SHELVINGS FOR STORAGE BY OWNER
3. NEW CONFERENCE 12 SEATER CUSTOM TABLE BY OWNER.
4. NEW 6-SEATER ROUND CONFERENCE TABLE BY OWNER
5. NEW 2-SEATER ROUND CONFERENCE TABLE BY OWNER
6. NEW OFFICE DESK/S AND CABINETS BY OWNER. REFER TO LAYOUT,
7. NEW APPLIANCE/S BY OWNER. REFER TO LAYOUT ON THIS SHEET.
8. ALL EQUIPMENT IS BY OWNER. REFER TO LAYOUT ON THIS SHEET.
8. BUILT-IN CABINET FOR STORAGE. SEE DETAIL ON SHEET A-501.
9. EXISTING MILLWORK TO REMAIN. PROTECT IN PLACE.
10. NEW 6'X6' LATERAL STORAGE AND WORKING TOP FURNITURE

GENERAL NOTES

1. FURNITURE VENDOR TO COORDINATE ALL POWER OUTLETS LOCATION WITH ELECTRICAL POWER PLAN.

2. ALL FURNITURE LAYOUT ARE DESIGNERS' INTENT. REFER TO FURNITURE VENDOR DIMENSIONS, LAYOUT, AND DETAILS.

3. ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION OF ALL POWER OUTLET RELATED TO ALL FURNITURE & EQUIPMENT. CONFIRM FURNITURE, EQUIPMENT,/WORKSTATIONS EXACT LOCATION IN FIELD.

4. NEW FURNITURE AND EQUIPMENT ARE BY OWNER. CONTRACTOR TO COORDINATE ALL NECESSARY ELECTRICAL AND DATA INFRASTRUCTURE FOR FURNITURE & EQUIPMENT INSTALLATION.

5. ALL NEW OFFICE CHAIRS ARE BY OWNER. VENDORS ARE TO COORDINATE TO OWNER WITH NUMBERS AND STYLE.

6. ALL NEW APPLIANCES BY OWNER. REFER TO THIS FURNITURE PLAN FOR ELECTRICAL/DATA CONNECTION. CONTRACTOR TO VERIFY EXACT LOCATION IN FIELD AND COORDINATE WITH ELECTRICAL DRAWINGS.

7. ENCLOSED OFFICES WILL HAVE NEW OFFICE DESKS AND STORAGE CABINETS BY OWNER, EXCEPT ROOM 105. REFER TO ELECTRICAL DRAWINGS FOR DATA AND COMMUNICATION CONNECTION.

8. ALL EXISTING FURNISHINGS, INCLUDING POWER, TO ACCESS AND COMPLETE RETROFIT WORK SHALL BE REMOVED AND REINSTALLED. REINSTALLATION OF EXISTING FURNISHINGS AND RECONNECTION OF POWER SHALL BE PROVIDED BY GENERAL CONTRACTOR

9. EXISTING FURNISHINGS, INCLUDING POWER, FOR INSTALLATION OF NEW FURNISHINGS SHALL BE REMOVED BY GENERAL CONTRACTOR.

10. ALL NEW FURNISHINGS AND NEW POWER SHALL BE INSTALLED BY THE CONTRACTOR

NEW FURNITURE LAYOUT PLAN | 1/8"=1'-0" | 1

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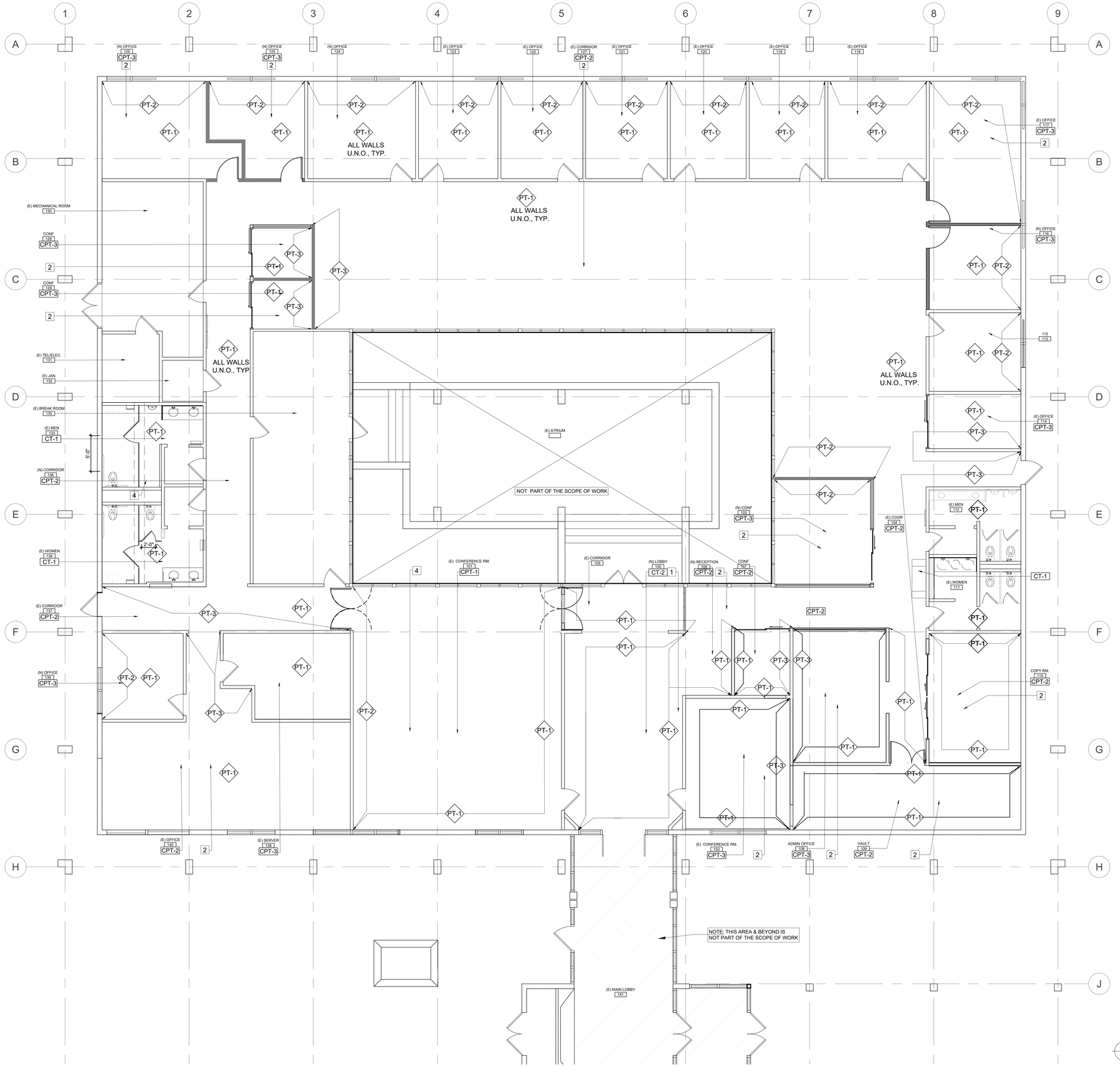
SHEET TITLE

NEW FURNITURE LAYOUT PLAN

SHEET NUMBER

A-110

SHEET NO. OF



FLOOR AND WALL PLAN 3/16" = 1'-0" 1

KEYNOTES

1. EXISTING TILE TO REMAIN
2. NEW CARPET TILE
3. NEW FLOOR TILE TO MATCH EXISTING
4. PATCH AND REPAIR WHERE NECESSARY TO MATCH EXISTING

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR FLOOR FINISH, MEANS AND METHODS AND ACCORDING TO FOLLOW MANUFACTURE'S INSTALLATION INSTRUCTIONS AND DETAILS

2. CONTRACTOR IS TO VERIFY EXACT MIXTURE OF PAINT AND COLOR TO OWNER/ ARCHITECT APPROVAL.

3. PROTECT, CLEAN ALL EXISTING TO REMAIN FLOOR FINISH.

4. CONTRACTOR TO REPLACE DAMAGED FLOOR FINISH MARKED AS EXISITNG TO REMAIN. MATCH AND ALIGN TO EXISTING MATERIALS AND LEVEL.

5. FOR ADDITIONAL INFORMATION NOT SHOWN ON THIS SHEET, SEE ROOM FINISH SCHEDULE ON A-201.

LEGEND

- EXISTING DOOR
- NEW DOOR
- EXISTING WALL
- EXISTING EXTERIOR WALL
- NEW WALL
- 100 — ROOM NUMBER
- NOT IN SCOPE
- CT-1 — NEW TILE Crossville - Color Blox, A1108 Sea Otter, 12x12, 6" Coved Base.
- CT-2 — EXISTING TILE TO REMAIN
- CPT-1 — NEW CARPET TILE Shaw Contract - Vertical Layers, Pattern: Expose Color: Past
- CPT-2 — NEW CARPET TILE Shaw Contract - Vertical Layers, Pattern: Expose Color: Past
- CPT-3 — NEW CARPET TILE Shaw Contract - Vertical Layers, Pattern: Uncover Color: Pewter
- PT-1 — NEW WALL COLOR BENJAMIN MOORE - SOFT CHAMOIS, OC-13, EGGSHELL
- PT-2 — NEW WALL COLOR DUNN EDWARDS - BAY OF HOPE, DE6331,EGGSHELL
- PT-3 — NEW WALL COLOR DUNN EDWARDS - BUNGALOW TAUPE, DE6172, EGGSHELL

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP

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REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
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CHECKED BY	

SHEET TITLE

FINISH FLOOR AND WALL PLAN

SHEET NUMBER

A-111

SHEET NO. OF

DOOR SCHEDULE

DOOR NO.	ROOM NO.	ROOM NAME	WIDTH	HEIGHT	THK.	TYPE	FIRE RATING	DOOR			FRAME		DETAIL				HARDWARE GROUP	REMARKS
								CONST.	MATERIAL	FINISH	MATERIAL	FINISH	HEAD (SEE DWG ...)	JAMB (SEE DWG ...)	THRESHOLD (SEE DWG ...)			
EXST(NEW)																		
100	100	LOBBY	PR 4'-0"	8'-0"	1-3/4"	F	1 HOUR	GL	GL	GL	METAL	PAINT	-	-	-	-	-	HARDWARE SPEC. 087100 W/BPO
101A	101	CONFERENCE ROOM	PR 3'-0"	7'-0"	1-3/4"	C	-	GL	GL	GL	METAL	-	-	-	-	-	-	TYPE 003 PER HDW.SPEC SECTION 084126
101B	101	CONFERENCE ROOM	PR 3'-0"	7'-0"	1-3/4"	C	-	GL	GL	GL	METAL	-	-	-	-	-	-	TYPE 002 PER HDW. SPEC SECTION 084126
110	110(117)	OFFICE	3'-0"	7'-0"	1-3/4"	B	-	HC	WOOD	PL	METAL	PAINT	-	-	-	-	3	
111	111(116)	OFFICE	3'-0"	7'-0"	1-3/4"	B	-	HC	WOOD	PL	METAL	PAINT	-	-	-	-	3	
113	113(114)	OFFICE	3'-0"	7'-0"	-	A	-	GL	GL	GL	METAL	-	-	-	-	-	-	SLIDING DOOR COORD. W/FURNITURE VENDOR
116	116(103)	CONFERENCE ROOM	3'-0"	7'-0"	-	A	-	GL	GL	GL	METAL	-	-	-	-	-	-	SLIDING DOOR COORD. W/FURNITURE VENDOR
119	119(110)	COPY RM.	PR 3'-0"	7'-0"	-	A	-	GL	GL	GL	METAL	-	-	-	-	-	-	STOREFRONT SLIDING DOOR, DARK BRONZE
120	120(107)	CONFERENCE ROOM	3'-0"	7'-0"	-	A	-	GL	GL	GL	METAL	-	-	-	-	-	-	SLIDING DOOR COORD. W/FURNITURE VENDOR
122	122(109)	VAULT	36"/22"	7'-0"	1-3/4"	E	-	HM	METAL	PAINT	METAL	PAINT	-	-	-	-	12	UNEVEN PAIR
134	134(129)	CONF. RM.	3'-0"	7'-0"	-	A	-	GL	GL	GL	METAL	-	-	-	-	-	-	SLIDING DOOR COORD. W/FURNITURE VENDOR
135	135(128)	CONF. RM.	3'-0"	7'-0"	-	A	-	GL	GL	GL	METAL	-	-	-	-	-	-	SLIDING DOOR COORD. W/FURNITURE VENDOR
136	136(125)	OFFICE	3'-0"	7'-0"	1-3/4"	B	-	HC	WOOD	PL	METAL	PAINT	-	-	-	-	3	
137	137(126)	OFFICE	3'-0"	7'-0"	1-3/4"	B	-	HC	WOOD	PL	METAL	PAINT	-	-	-	-	3	
(E)141A	141	VESTIBULE	PR 3'-0"	7'-0"	1-3/4"	G	-	SF	SF	SF	METAL	PAINT	-	-	-	-	-	(N) BPO SW200i-OS
(E)141B	141	VESTIBULE	PR 3'-0"	7'-0"	1-3/4"	G	-	SF	SF	SF	METAL	PAINT	-	-	-	-	-	(N) BPO SW200i-OS

ABBREVIATIONS:

GL - GLASS
SC - SOLID CORE
HC - HOLLOW CORE
PL - PLASTIC LAMINATE
BPO - OPERATOR CAPABLE OF 100-CYCLES OF OPERATION ON BATTERY BACK-UP PER SPEC. 087113

PR - PAIR
(E) - EXISTING
SF - STOREFRONT, ALUMINUM & GLASS

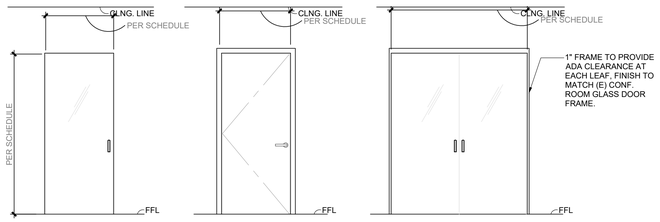
GENERAL NOTE:

IN B OCCUPANCIES, KEY LOCKING HARDWARE MAY BE USED AT THE MAIN ENTRY DOORS, PROVIDED A SIGN IN CONTRASTING LETTERS OF 1 INCH OR MORE IS PROVIDED AT THE DOORS STATING: "THIS DOOR TO REMAIN UNLOCKED WHEN THE SPACE IS OCCUPIED." DOORS ALONG PATH OF EGRESS WILL BE PROVIDED W/ PANIC HARDWARE INCLUDING EXISTING DOORS.

GENERAL NOTE:

EXISTING DOOR NUMBERS NOT SPECIFIED ON DOOR SCHEDULE ARE ALL EXISTING TO REMAIN PROTECT-IN-PLACE, U.N.O.

DOOR SCHEDULE — SCALE: NTS — 6



DOOR TYPE — SCALE: 3/8"=1'-0" — 5

REFER TO SHEET A-111 FOR SPECIFIC PAINT AND FLOORING INFORMATION/LOCATIONS

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR FINISH	WALL: EAST WALL FINISH	WALL: SOUTH WALL FINISH	WALL: WEST WALL FINISH	WALL: NORTH WALL FINISH	CEILING: MATERIAL	CEILING: HEIGHT	REMARKS (SEE TYPICAL NOTES BELOW)
100	LOBBY	EXISTING	PT	EXISTING WALL	PT	EXISTING GLASS	GYP. BD/ ACT	SEE A-505	NEW FLOOR BASE TO MATCH EXTG BASE, CUSTOM INSERT ON COMMON SIDE OF LOBBY DOORS, T1 AND T2
101	CONFERENCE ROOM	CPT	PT	PT	PT	EXISTING GLASS	GYP. BD/ACT	EXTG TO REMAIN	
102	CONF. ROOM	CPT	PT	PT	PT	PT	GYP. BD/ACT	SEE A-505	-
103	CONF.	CPT	EXISTING GLASS	GLASS	GLASS	PT	ACT	EXTG TO REMAIN	GLASS PARTITIONS BY FURNITURE VENDOR, COORDINATE REQUIREMENTS.
104	CORRIDOR	CPT	PT	PT	PT	-	ACT	EXTG TO REMAIN	
105	CORRIDOR	CPT	PT	PT	PT	-	ACT	EXTG TO REMAIN	
106	RECEPTION	CPT	PT	PT	PT	-	ACT	EXTG TO REMAIN	
107	CONF.	CPT	PT	PT	PT	GLASS	ACT	EXTG TO REMAIN	GLASS PARTITIONS BY FURNITURE VENDOR, COORDINATE REQUIREMENTS.
108	ADMIN. OFFICE	CPT	PT	PT	PT	GLASS	ACT	EXTG TO REMAIN	GLASS PARTITIONS BY FURNITURE VENDOR, COORDINATE REQUIREMENTS.
109	VAULT	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
110	COPY ROOM	CPT	PT	PT	GLASS/PT	PT	ACT	EXTG TO REMAIN	GLASS STOREFRONT/SLIDING DOORS DARK BRONZE FINISH.
111	WOMEN	EXTG TO REMAIN							
112	MEN	EXTG TO REMAIN							
113	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
114	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
115	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
116	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
117	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
118	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
119	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
120	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
121	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
122	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
123	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
124	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
125	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
126	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
127	CORRIDOR	CPT		EXISTING GLASS			ACT	EXTG TO REMAIN	
128	CONF.	CPT	GLASS	PT	PT	GLASS	ACT	EXTG TO REMAIN	
129	CONF.	CPT	GLASS	PT	PT	PT	ACT	EXTG TO REMAIN	
130	MECHANICAL RM.	EXTG TO REMAIN							
131	TELE/ELEC	EXTG TO REMAIN							
132	JANITOR	EXTG TO REMAIN							
133	MEN	CT	PT/CT				GYP. BD	EXTG TO REMAIN	
134	WOMEN	CT	REFER TO SHEET A-401				GYP. BD	EXTG TO REMAIN	
135	BREAK ROOM	-	-	-	-	-	ACT	EXTG TO REMAIN	NOT IN SCOPE
136	CORRIDOR	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
137	CORRIDOR	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
138	SERVER	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	-
139	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	
140	OFFICE	CPT	PT	PT	PT	PT	ACT	EXTG TO REMAIN	

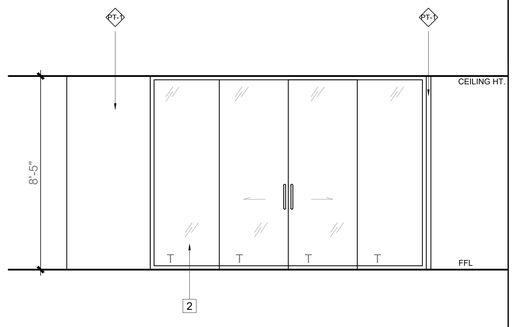
TYPICAL NOTES:
1. CONTRACTOR TO VERIFY EXISTING FLOOR CONDITION ON SITE.
2. REPAIR ALL DAMAGED FLOOR FINISH DUE TO WALL PARTITION DEMOLITION TO MATCH/LEVEL WITH ADJACENT FLOOR FINISH.
3. ALL EXISTING FINISHES TO REMAIN IN EXISTING ROOMS OTHERWISE NOTED.
4. CONTRACTOR TO VERIFY EXISTING CEILING HEIGHTS.
5. ALL INTERIOR FINISHES SHALL TO BE VERIFIED WITH AOR & OWNER PRIOR TO INSTALLATION AND APPLICATION.
6. PATCH, REPAIR, & PAINT EXISTING DAMAGED WALLS DUE TO SEISMIC BRACING CONSTRUCTION, TYPICAL THROUGHOUT.

FLOOR FINISH LEGEND:
CPT= CARPET
PT = PAINT
CT = CERAMIC TILE
T1 = LAMINAM PIETRA DI SAVOIA PERLA , MAX. ⅛" GROUT JOINTS, CBP #643 WARM GRAY - CONTACT MONICA FARLEY WITH CROSSVILLE
T2 = LAMINAM FOKOS 5.6 PIOMBO, MAX. ⅛" GROUT JOINTS, CBP #335 WINTER GRAY - CONTACT MONICA FARLEY WITH CROSSVILLE

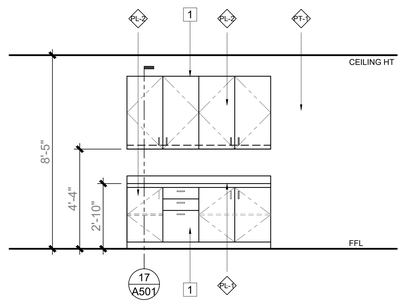
GENERAL NOTE:

WALL AND CEILING FINISH MATERIALS SHALL NOT EXCEED THE FLAME SPREAD AND SMOKE DENSITY INDEXES IN CBC 803.1.1

FINISH SCHEDULE — SCALE: NTS — 3



ELEVATION @ COPY ROOM 119 — SCALE: 3/8" = 1'-0" — 4



ELEVATION @ COPY ROOM 114 — SCALE: 3/8" = 1'-0" — 2

ELEVATION @ ADMIN. OFFICE 114 & CONFERENCE 120 — SCALE: 3/8" = 1'-0" — 1

KEYNOTES

1. NEW MILLWORK, SEE PLAN
2. NEW GLAZED WALLS AND SLIDING GLASS DOORS, COORDINATE W/ FURNITURE VENDOR.
3. EXISTING MILLWORK TO REMAIN

GENERAL NOTES

FINISH SCHEDULE:

1. CONTRACTOR IS TO VERIFY INTERIOR CONDITION OF THE BUILDING PRIOR TO DEMOLITION AND APPLICATION OF THE INTERIOR FINISHES..

2. CONTRACTOR SHALL PROCEED WITH THE FINISHES UPON CONFIRMATION AND APPROVAL OF THE ARCHITECT OF RECORDS (AOR). SHOP DRAWINGS AND SUBMITTAL SHALL BE SUBMITTED AND APPROVED BY AOR PRIOR TO APPLICATION. PROVIDE SAMPLES OF MATERIALS FOR APPROVAL. REFER TO SPECIFICATIONS OR PROJECT MANUAL FOR INFORMATION.

3. ALL "EXISTING TO REMAIN" SUCH AS CEILING HEIGHTS SHALL BE VERIFIED ON SITE PRIOR TO FINAL INSTALLATION OF NEW CEILING GRID SUPPORTS AND CEILING TILES.

4. MATCH NEW AND EXISTING MATERIALS IN AREAS OF CONNECTION OR INTERSECTION WITH REGARDS TO WALLS, BASE, AND FLOORING FINISHES. CONTRACTOR IS TO SEEK APPROVAL FROM AOR.

DOOR SCHEDULE & HARDWARE:

1. CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, PARTS, AND SUPPORT PRODUCTS FOR A COMPLETE DOOR AND DOOR HARWARE INSTALLATION.

2. CONTRACTOR SHALL VERIFY ALL OPENING DIMENSIONS BEFORE FABRICATION AND INDICATE MEASUREMENTS ON DOOR AND FRAMES SHOP DRAWINGS FOR REVIEW.

3. ALL DOOR HARDWARE SHALL BE MOUNTED FROM 30" TO 44" ABOVE FLOOR.

DOOR HARDWARE SCHEDULE

TYPE	QTY.	DESCRIPTION	CATALOG NO.	FINISH	MFR.

(3) HARDWARE GROUP NO. 3:

3 EA	HINGE	5BB1 4.5X4.5	613	IVE
1 EA	ENTRANCE/OFFICE LOCK	ND50PD RHO	613	SCH
1 EA	FLOOR STOP	FS436	630	IVE

(12) HARDWARE GROUP NO. 12:

6 EA	HINGE	5BB1 4.5X4.5	613	IVE
1 EA	STOREROOM LOCK	ND80PD RHO	613	SCH
1 EA	FLOOR STOP	FS436	630	IVE

K

LEGEND

PT-1	WALL COLOR
PL-1	PLASTIC LAMINATE COUNTERTOP
PL-2	PLASTIC LAMINATE CABINET
PL-3	PLASTIC LAMINATE MILLWORK
T	TEMPERED
PLAM	PLASTIC LAMINATE BY FURNITURE VENDOR

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IDS

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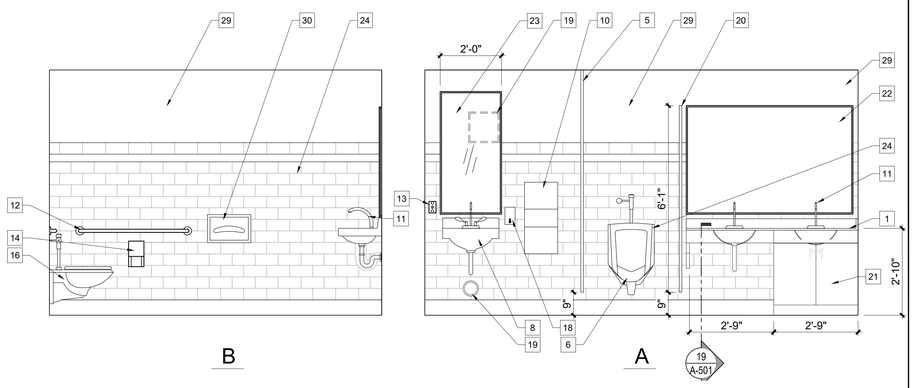
SHEET TITLE

DOOR AND FINISH SCHEDULE AND INTERIOR ELEVATIONS

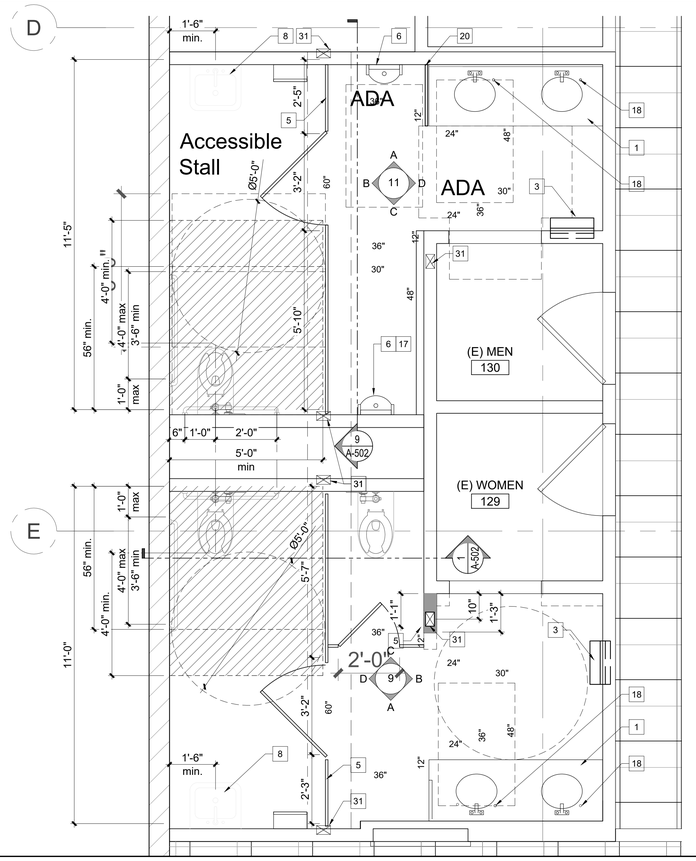
SHEET NUMBER

A-201

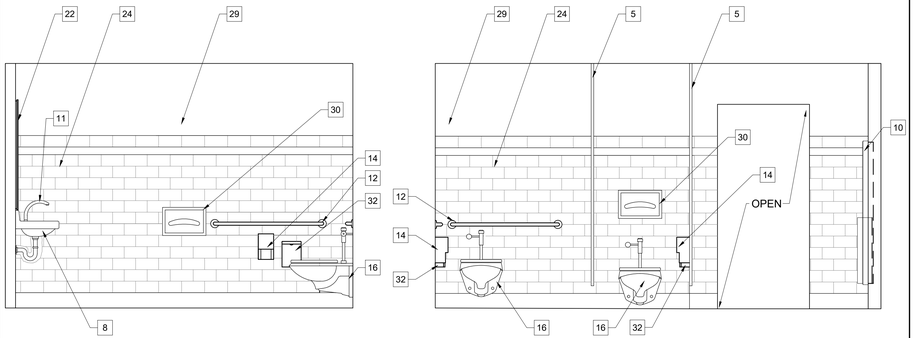
SHEET NO. OF



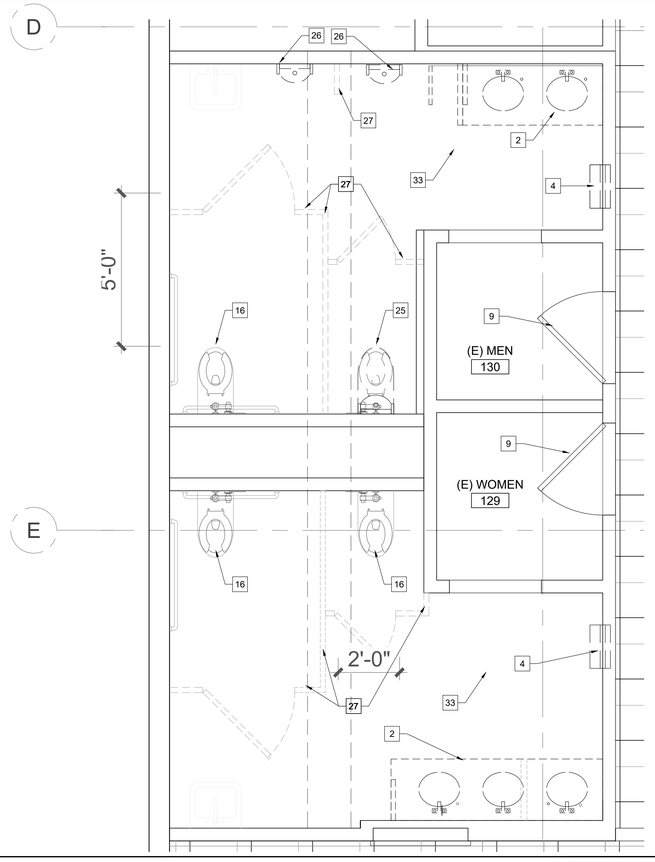
MEN RESTROOM ELEVATION | 1/2"=1'-0" | 11



NEW RESTROOMS 129 & 130 NEW FLOOR PLAN | 1/2" = 1'-0" | 3



WOMEN RESTROOM ELEVATION | 1/2"=1'-0" | 9



EXISTING RESTROOMS 107 & 108 DEMOLITION FLOOR PLAN | 1/2" = 1'-0" | 1

KEYNOTES

1. CUSTOM VANITY W/ CAMBRIA QUARTZ SURFACING; "NEWQUAY" COUNTERTOP & 4" SPLASH (2 SIDES).
2. (E) COUNTERTOP/ SINK & SPLASH - TO BE REMOVED
3. STAINLESS RECESSED PAPER TOWEL DISPENSER & WASTE RECEPTACLE
4. (E) STAINLESS RECESSED PAPER TOWEL DISPENSER & WASTE RECEPTACLE - TO BE RELOCATED
5. METPAR, NICKEL SILVER #304, CEILING HUNG TOILET PARTITIONS
6. URINAL, SEE PLUMBING DRAWINGS.
7. NOT USED
8. ACCESSIBLE LAVATORY, SEE PLUMBING DRAWINGS.
9. (E) DOOR & FRAME TO REMAIN (PROTECT)
10. TRASH RECEPTACLE
11. ACCESSIBLE FAUCET, TYP., SEE PLUMBING DRAWINGS.
12. (E) GRAB BAR - SIDE OF TOILET, 42" / REAR OF TOILET, 36"
13. GFCI OUTLET, SEE ELECTRICAL DRAWINGS.
14. (E) TOILET TISSUE DISPENSER TO REMAIN
15. THERMAL PROTECTOR DRAIN & HOT PIPES
16. (E) TOILET (WALL HUNG) - TO REMAIN. PROTECT IN PLACE
17. ACCESSIBLE URINAL, SEE PLUMBING DRAWINGS.
18. SOAP DISPENSER
19. (E) PLUMBING ACCESS PANEL TO REMAIN
20. STAINLESS STEEL URINAL SCREEN - S.S. URINAL WALL BRACKET
21. CASEWORKS, SEE DETAIL PLASTIC LAMINATE 11/A-501
22. MIRROR WITH ALUM. FRAME
23. REMOVABLE MIRROR WITH ALUM. FRAME
24. EXISTING WALL TILE TO REMAIN WHERE POSSIBLE. REPLACE AS NECESSARY WITH MATCHING TILE AND GROUT.
    MATCHING FIELD TILE:
    DAL TILE, SKYBRIDGE DT SY95, OFF WHITE, 4"X8"
    GROUT MAPEI 314 BISCUIT
    ACCENT TILE:
    ANN SACKS, ASI7964, SMOKE, GLOSS FINISH, 2"X8"
25. (E) WATER CLOSET (WALL HUNG) - TO BE REMOVED
26. (E) URINAL - TO BE REMOVED
27. (E) TOILET PARTITION AND DOOR TO BE REMOVED
28. (E) TOILET (WALL HUNG) - PROTECT IN PLACE
29. DRYWALL - TEXTURE / PAINT- TO MATCH EXISTING
30. (E) SEAT COVER DISPENSER TO REMAIN
31. 4x6 WOOD COUMN
32. SURFACE MOUNTED SANITARY NAPKIN DISPOSAL
33. EXISTING FLOOR TILES TO BE DEMOLISHED, INCLUDING FLOOR BASE AND ITS ENTIRETY.

LEGEND

- EXISTING DOOR
- NEW DOOR
- EXISTING WALL
- EXISTING EXTERIOR WALL
- NEW WALL
- 100 ROOM NUMBER
- XX PARTITION TYPE
- 101A DOOR TAG
- INDICATES DEMO ITEMS

CLIENT

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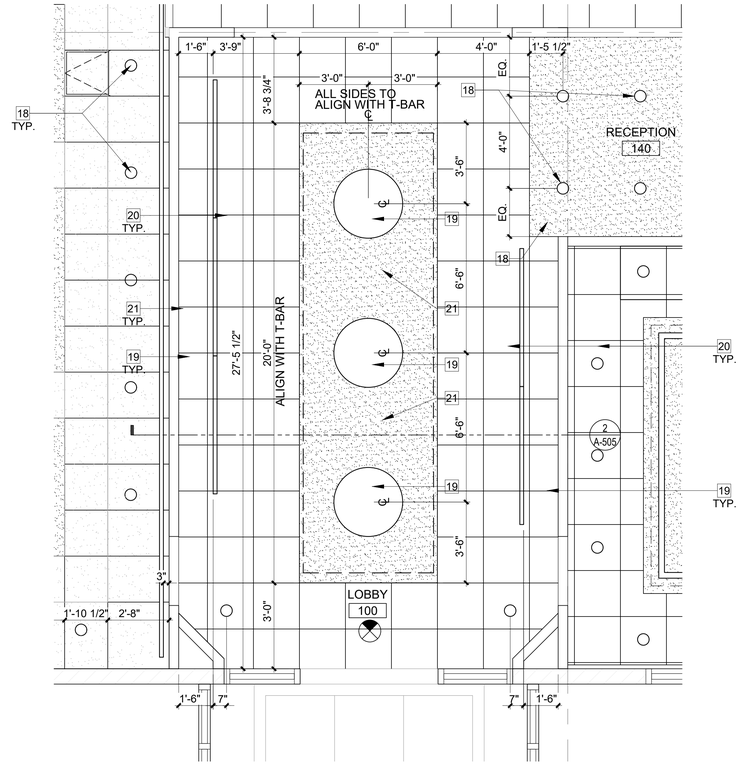
SHEET TITLE

ENLARGED FLOOR PLAN

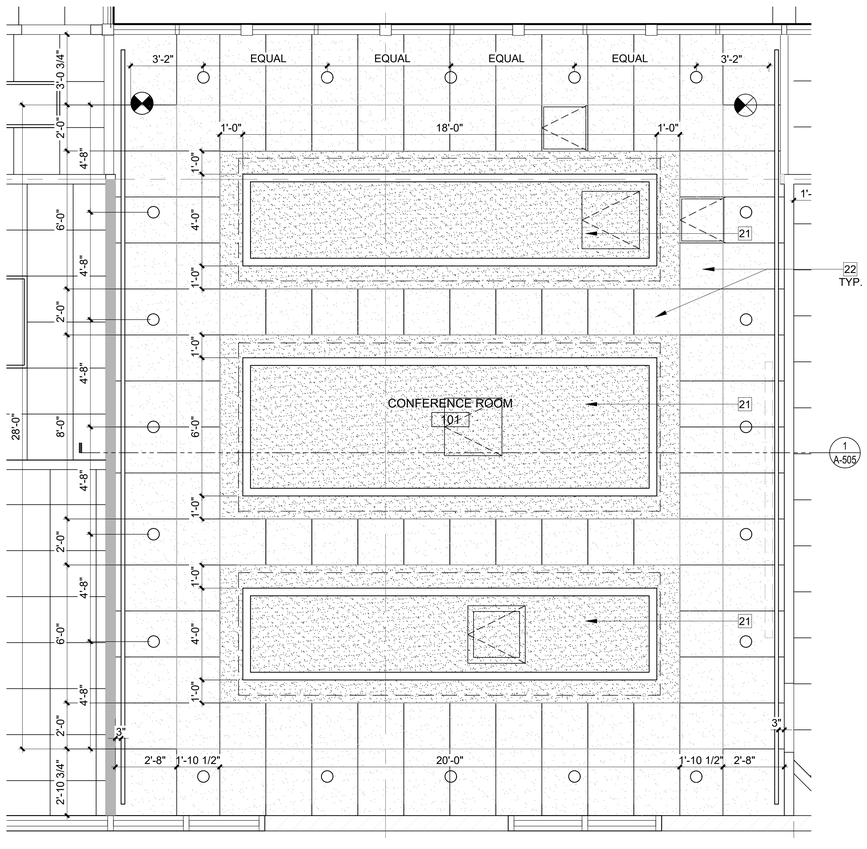
SHEET NUMBER

A-401

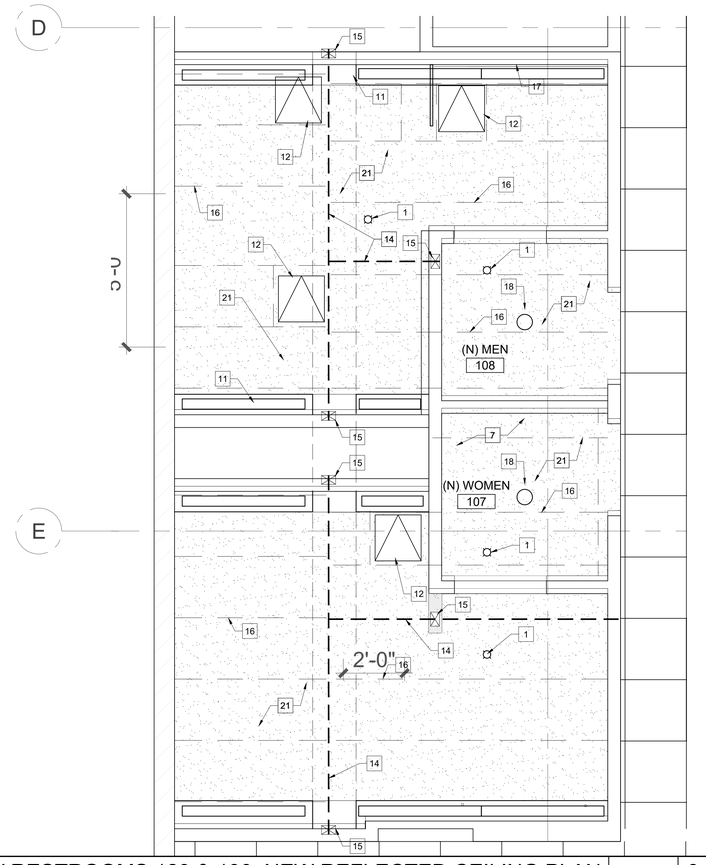
SHEET NO. OF



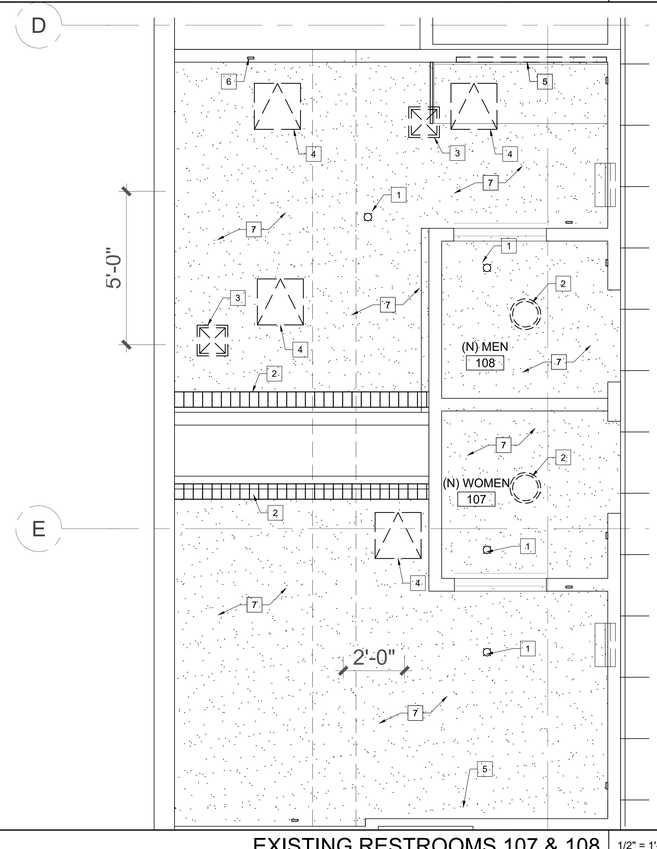
EXISTING LOBBY 100 - PROPOSED REFLECTED CEILING PLAN | 3/8" = 1'-0" | 7



EXISTING CONFERENCE ROOM 101 - PROPOSED REFLECTED CEILING PLAN | 3/8"=1'-0" | 5



NEW RESTROOMS 129 & 130 NEW REFLECTED CEILING PLAN | 1/2" = 1'-0" | 3



EXISTING RESTROOMS 107 & 108 DEMOLITION REFLECTED CEILING PLAN | 1/2" = 1'-0" | 1

KEYNOTES

1 EXISTING FIRE SPRINKLER HEAD TO REMAIN

2 EXISTING LIGHT FIXTURE TO BE REMOVED

3 EXISTING HVAC DIFFUSER COVER TO BE REMOVED

4 EXISTING CEILING ACCESS HATCH TO BE RELOCATED

5 EXISTING WALL MOUNTED LIGHT FIXTURE TO BE REMOVED

6 EXISTING WALL MOUNTED FIRE ALARM STROBE TO BE RELOCATED

7 EXISTING GYP. BOARD CEILING TO BE REMOVED

11 1'x2' RECESSED CEILING LIGHT, SEE ELECTRICAL DRAWINGS

12 RELOCATED CEILING ACCESS HATCH, SEE DETAIL 8/A-502

13 NOT USED

14 NEW W10x12 STEEL BEAM. SEE DETAIL 7/A502

15 6x4 WOOD COL. SEE DETAIL 3/A502

16 6" METAL STUD CEILING FRAMING, SEE DETAIL 5/A-503

17 WALL MOUNTED LIGHT FIXTURE, SEE ELECTRICAL DRAWINGS

18 RECESSED DOWNLIGHT FIXTURE, SEE ELECTRICAL DRAWINGS

19 NEW LIGHTING FIXTURE, SEE ELECTRICAL DWGS. FOR ADDITIONAL INFORMATION, TYP.

20 NEW 24X24 ACOUSTICAL T-BAR CEILING, TYP.

21 NEW 5/8" THK. TYPE "X" GYPSUM BOARD CEILING FINISH, PAINTED, TYP.

22 (N) GLUED-ON ACOUSTICAL CEILING TILE OVER 1/2" GYP BD ON METAL STUD FRAMING, TYP.

LEGEND

- EXISTING DOOR
- NEW DOOR
- EXISTING WALL
- EXISTING EXTERIOR WALL
- 100 ROOM NUMBER
- GYP. BOARD CEILING
- FIRE SPRINKLER HEAD
- W - STEEL BEAM
- METAL STUD CEILING FRAMING
- 18"X18" CEILING ACCESS HATCH
- HVAC DIFFUSER

CLIENT

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	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

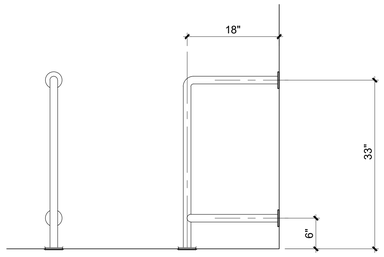
SHEET TITLE

ENLARGED REFLECTED CEILING PLAN

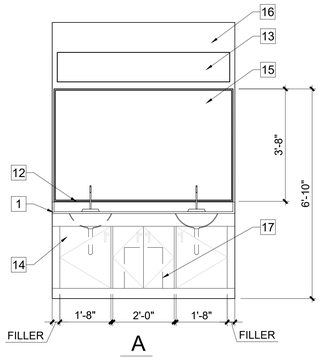
SHEET NUMBER

A-402

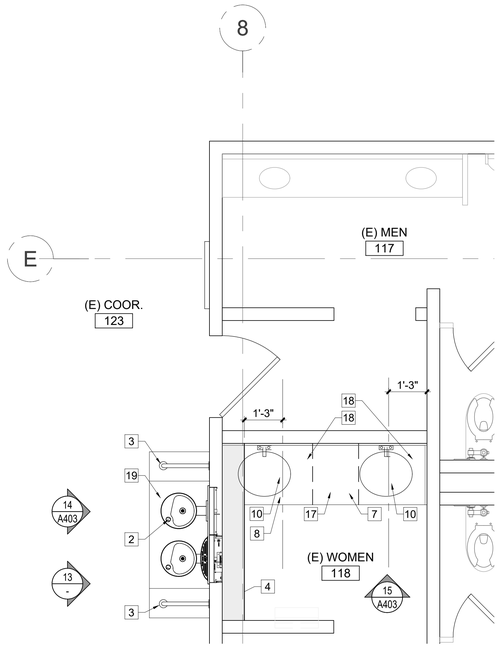
SHEET NO. OF



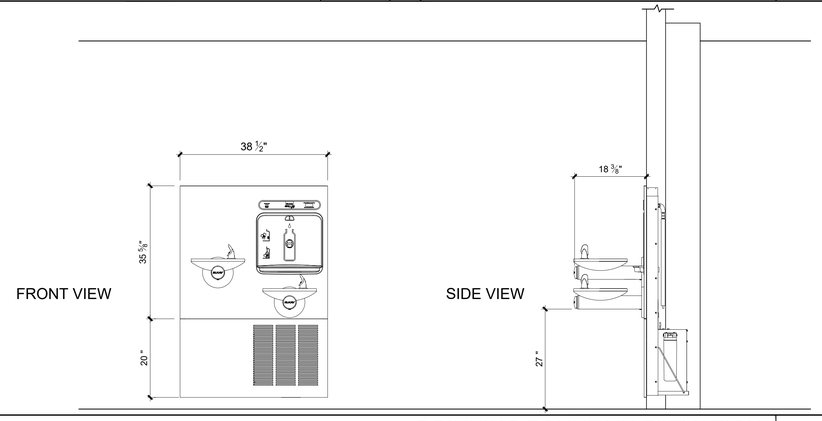
SAFETY BAR | 1"=1'-0" | 19



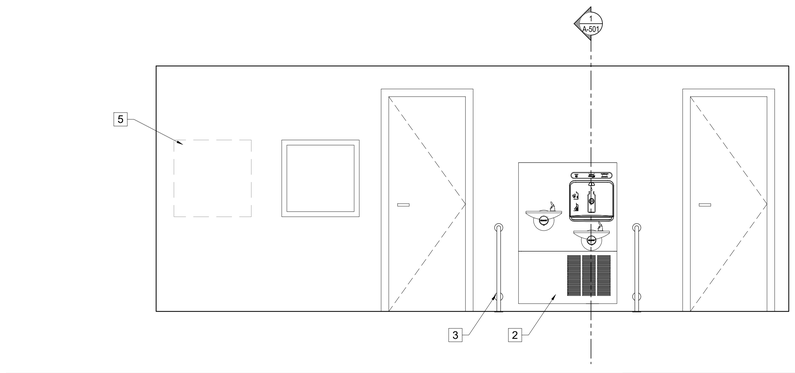
WOMEN RESTROOM ELEVATION | 1/2"=1'-0" | 15



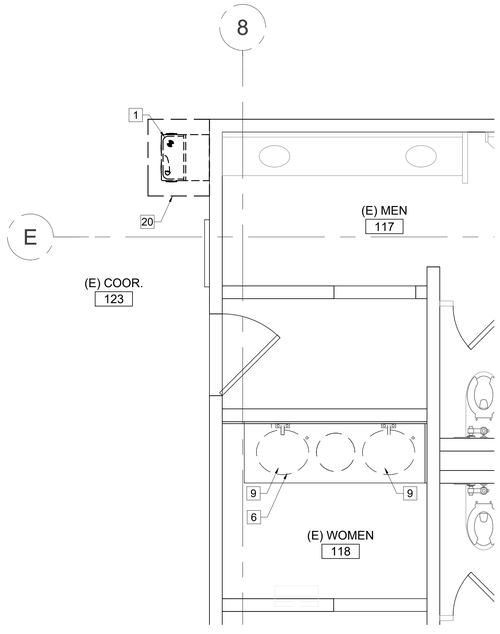
NEW DRINKING FOUNTAIN PLAN | 1/2"=1'-0" | 3



DRINKING FOUNTAIN ELEVATION | 3/4"=1'-0" | 14



DRINKING FOUNTAIN ELEVATION | 1"=1'-0" | 13



DRINKING FOUNTAIN DEMOLITION PLAN | 1/2" = 1'-0" | 1

KEYNOTES

1. (E) WATER DRINKING FOUNTAIN TO BE REMOVED, PATCH AND REPAIR AREA
2. ELKAY EZH2O BOTTLE FILLING STATION WITH INTEGRAL SWIRLFLO FOUNTAIN; REFRIGERATED FILTERED STAINLESS; MODEL LZWS-LRPBM28K; INSTALL PER MANUFACTURER RECOMMENDATION
3. SAFETY BAR, SEE DETAIL 19/A403
4. FURRED WALL
5. PATCH AND REPAIR WALL, PAINT TO MATCH EXISTING WHERE DRINKING FOUNTAIN REMOVED
6. (E) COUNTERTOP/ SINK & SPLASH - TO BE REMOVED
7. CUSTOM VANITY W/ CAMBRIA QUARTZ SURFACING; "NEWQUAY" COUNTERTOP & 4" SPLASH (3 SIDES).
8. NEW COUNTER TOP
9. EXISTING LAVATORY TO BE RELOCATED
10. RELOCATED COUNTER SINK
11. CUSTOM VANITY W/ CAMBRIA QUARTZ SURFACING; "NEWQUAY" COUNTERTOP & 4" SPLASH (3 SIDES).
12. ACCESSIBLE FAUCET, TYP., SEE PLUMBING DRAWINGS.
13. EXISTING WALL MOUNTED LIGHT FIXTURE TO REMAIN
14. CASEWORKS, SEE DETAIL PLASTIC LAMINATE 11/A-501
15. MIRROR WITH ALUM. FRAME
16. DRYWALL - TEXTURE / PAINT- TO MATCH EXISTING
17. RELOCATED WATER-HEATER
18. SOAP DISPENSER
19. TILE FLOORING - SEE FINISH FLOOR PLAN
20. REMOVE EXISTING TILE. PATCH AND REPAIR FOR FUTURE MATERIAL

LEGEND

- EXISTING DOOR
- NEW DOOR
- EXISTING WALL
- EXISTING EXTERIOR WALL
- NEW WALL
- 100 ROOM NUMBER
- XX PARTITION TYPE
- 101A DOOR TAG
- N.I.C. AREA
- INDICATES DEMO ITEMS

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS

IDS GROUP

1 PETERS CANYON ROAD, SUITE 130
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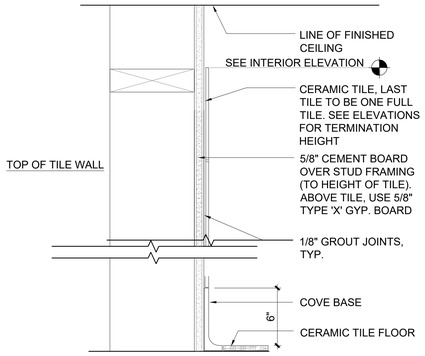
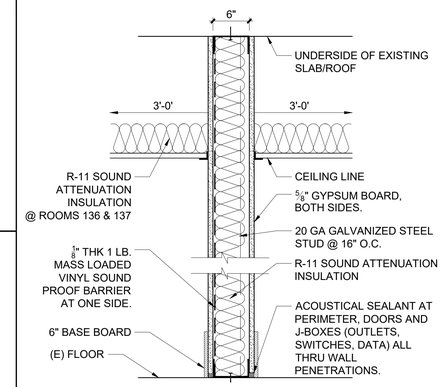
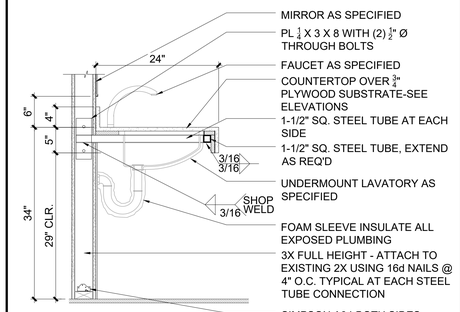


WALL FINISH | 3" = 1'-0" | 12



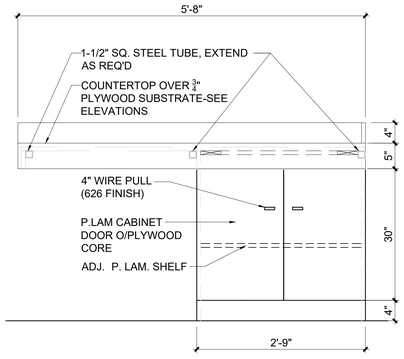
NOTE:
APPLICATION TO EXISTING DRYWALL:
-REMOVE EXISTING DRYWALL (ON SIDE TO RECEIVE MASS VINYL)
-EXISTING WALL FRAME SHALL REMAIN, PROTECT IN PLACE.
-PROVIDE R-11 FULL WALL SOUND ATTENUATION INSULATION
-EXTEND EXISTING FRAMING UP TO THE UNDERSIDE OF EXISTING ROOF/SLAB.
-PROVIDE THIN LAYER OF MASS LOADED VINYL 1 LB. SOUND PROOF BARRIER AT LEAST 1/8" THICK.
-FINISH WITH 5/8" TYPE "X" GYP BOARD ON MODIFIED SIDE.

SOUND ATTENUATED METAL STUD PARTITION | 1 1/2"=1'-0" | 2

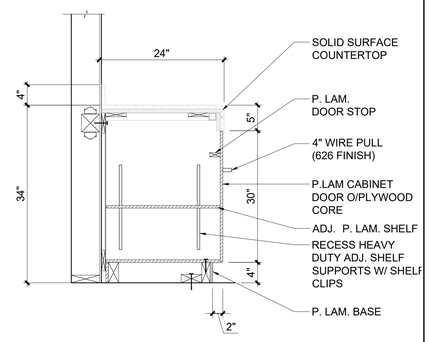


* REFER TO G-005 FOR ACCESSIBLE REQUIREMENT

SINK AT COUNTERTOP | 1" = 1'-0" | 19

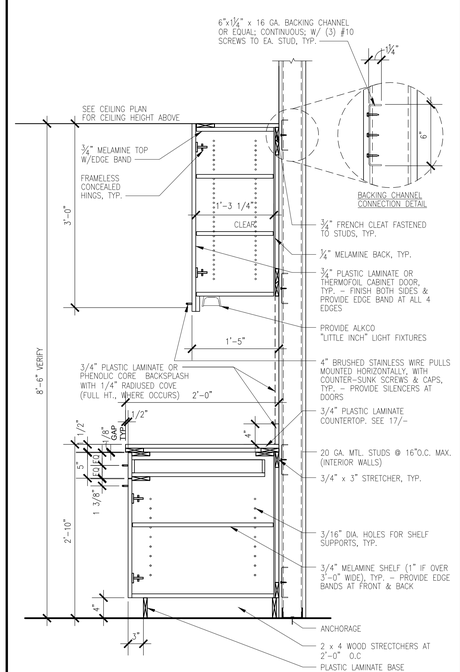


CASEWORK | 1" = 1'-0" | 15

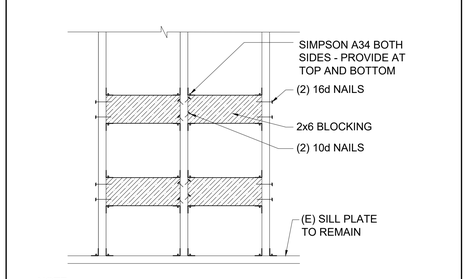


CASEWORK | 1" = 1'-0" | 11

NOT USED | 1" = 1'-0" | 6

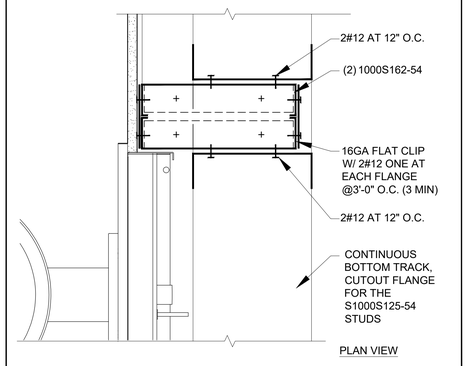


UPPER AND LOWER CABINET | 1 1/2" = 1'-0" | 17

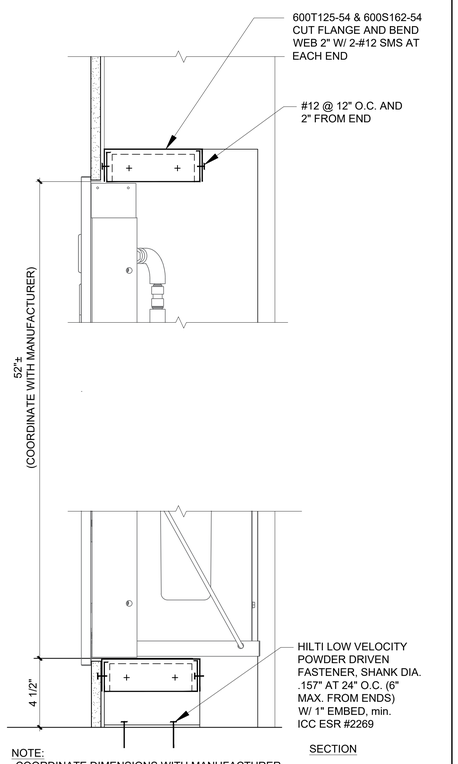


NOTE:
- MAXIMUM WEIGHT 200#

BLOCKING AT PLUMBING FIXTURE | 1" = 1'-0" | 14

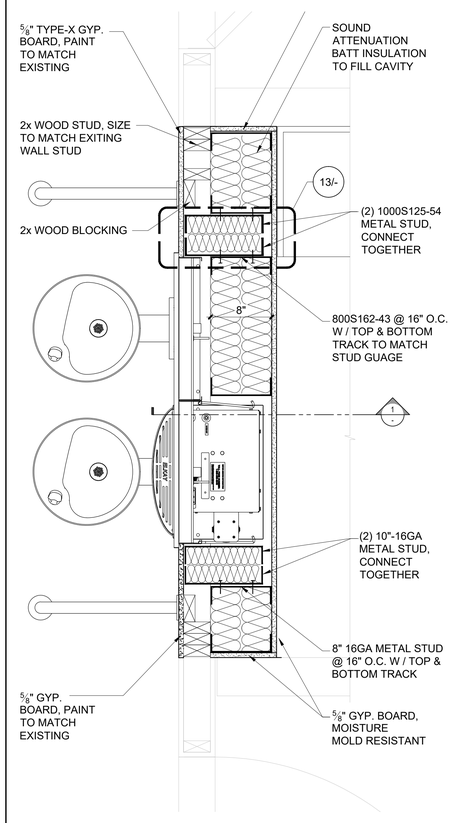


FRAMING AT DRINKING WATER FOUNTAIN | 1 1/2" = 1'-0" | 13

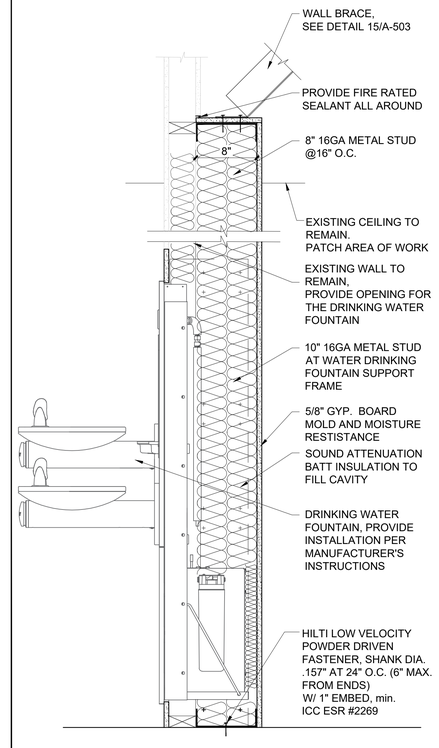


NOTE:
-COORDINATE DIMENSIONS WITH MANUFACTURER

FRAMING AT DRINKING WATER FOUNTAIN | 3" = 1'-0" | 9



PLAN VIEW AT DRINKING WATER FOUNTAIN | 1 1/2" = 1'-0" | 5



PARTITION WALL | 1 1/2" = 1'-0" | 1

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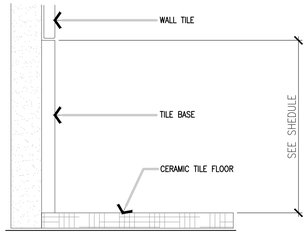
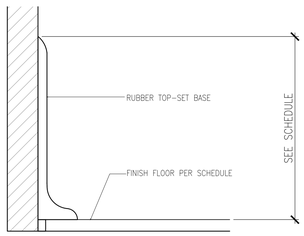
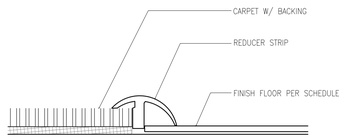


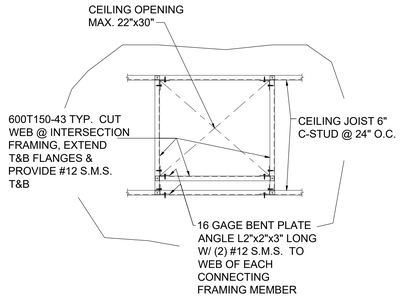
TILE BASE | 3" = 1'-0" | 16



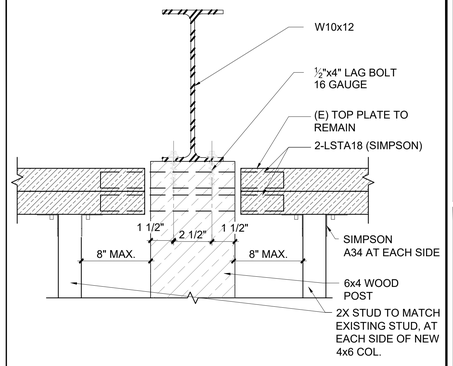
RUBBER BASE | 3" = 1'-0" | 13



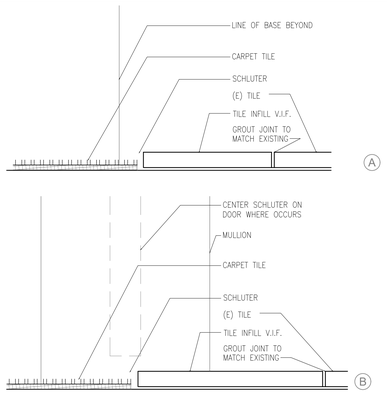
REDUCER STRIP | 3" = 1'-0" | 10



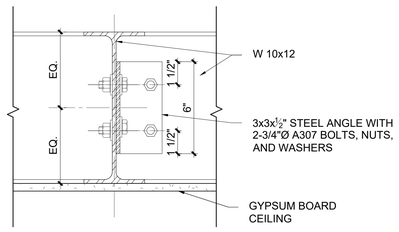
FRAMING AT ACCESS HATCH | 3" = 1'-0" | 8



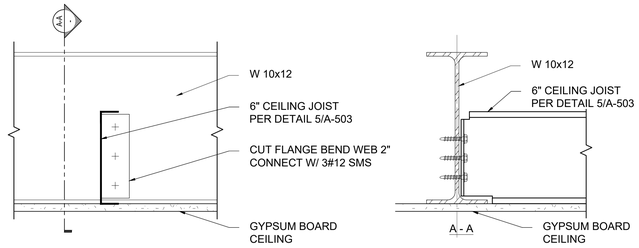
COLUMN CONNECTION AT TOP | 3" = 1'-0" | 4



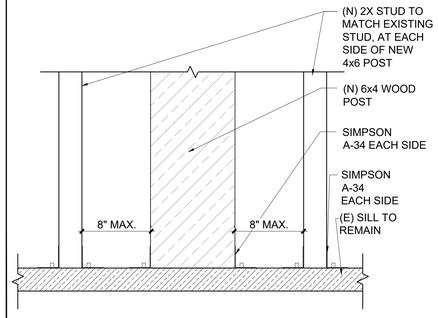
SCHLUTER TRANSITION | 3"=1'-0" | 15



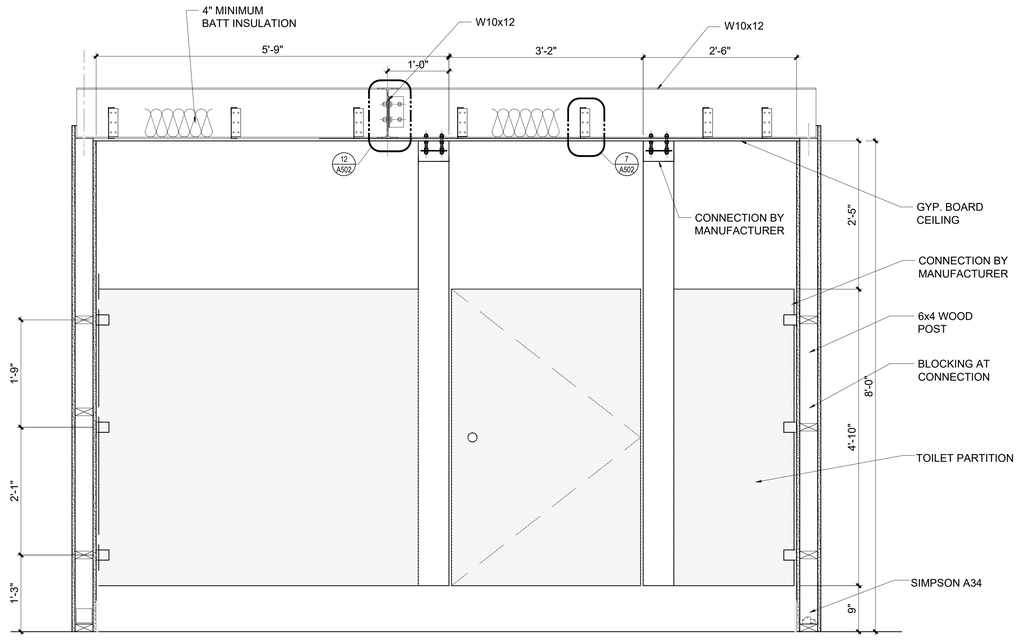
CONNECTION - W-BEAM TO W-BEAM | 3" = 1'-0" | 12



CONNECTION - CEILING JOIST TO W-BEAM | 3" = 1'-0" | 7

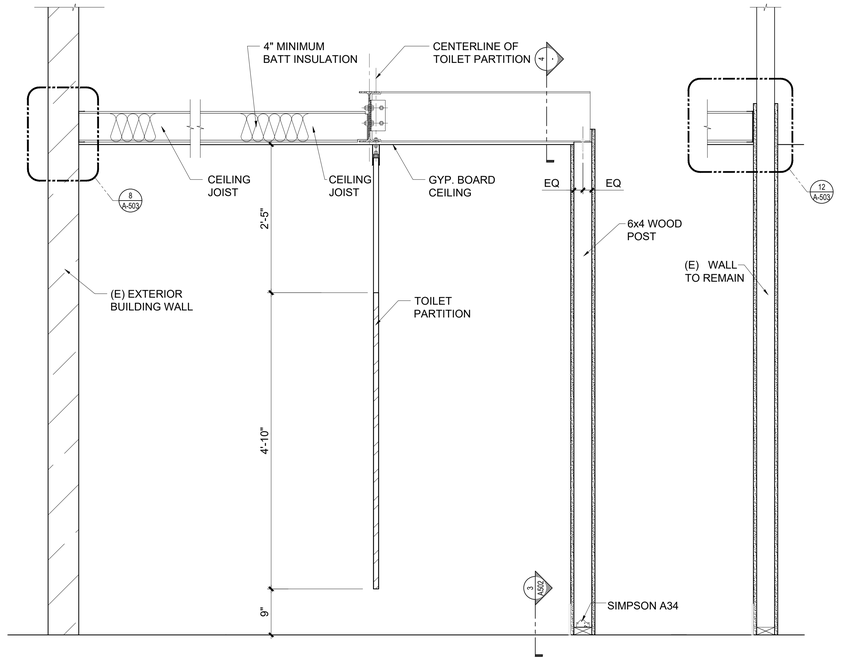


COLUMN CONNECTION AT SILL | 3" = 1'-0" | 3



NOTE:
1- CONTRACTOR TO PROVIDE SHOP DRAWINGS OF RESTROOM PARTITION TO OWNER/DESIGN TEAM FOR APPROVAL PRIOR TO INSTALLATION
2-INSTALL RESTROOM PARTITION PER MANUFACTURER RECOMMENDATION

ELEVATION / SECTION AT RESTROOM PARTITION | 1" = 1'-0" | 9



SECTION AT RESTROOM PARTITION | 1" = 1'-0" | 1

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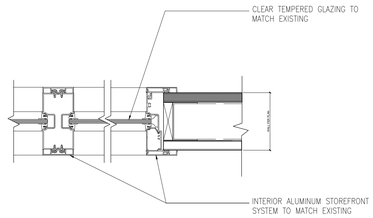
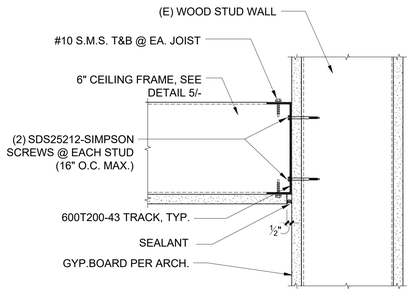
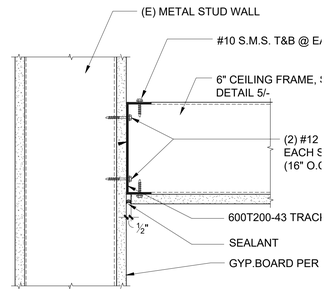


NOTE: PROVIDE PAINTABLE CAULK BETWEEN DOOR FRAME & PARTITION WHERE GAPS, HOLES VOIDS, ETC. OCCUR UPON/AFTER INSTALLATION OF DR. FRAME, TYP.

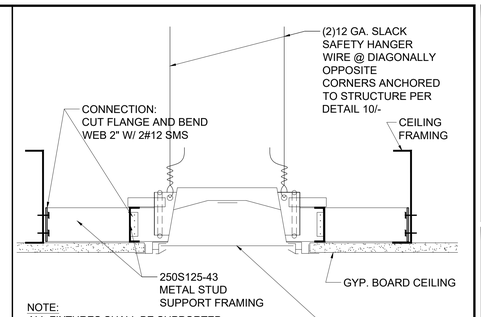
TYP. GLASS JAMB | 3"=1'-0" | 16



CEILING JOIST CONNECTION AT WALL | 1 1/2" = 1'-0" | 12

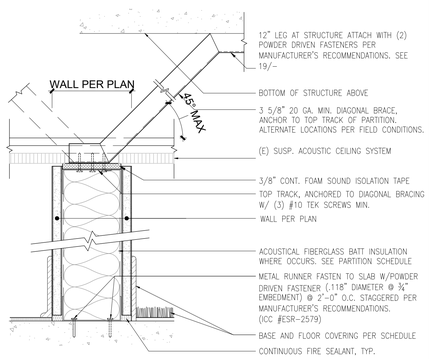


CEILING JOIST CONNECTION AT WALL | 1 1/2" = 1'-0" | 8



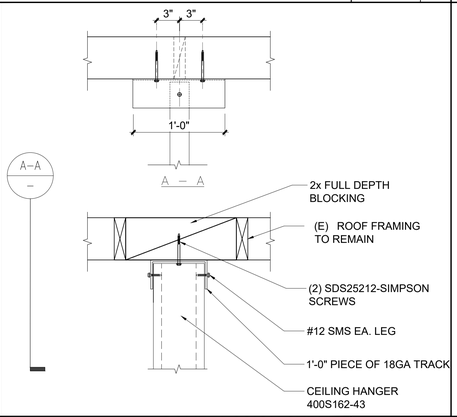
NOTE:
ALL FIXTURES SHALL BE SUPPORTED DIRECTLY BY MAIN RUNNERS OR BY SUPPLEMENTAL FRAMING WHICH IS SUPPORTED BY MAIN RUNNERS, AND POSITIVELY ATTACHED W/ SCREWS OR OTHER APPROVED CONNECTORS. ADD ADDITIONAL STUD AS NECESSARY TO INSTALL LIGHT FIXTURES.

RECESSED LIGHT FIXTURE | 1 1/2" = 1'-0" | 4

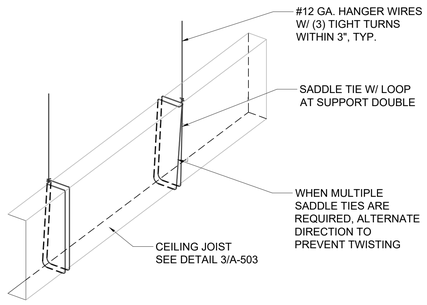


NOTE: LOCATE BRACING BETWEEN SUSPENDED GRID MAIN AND INTERMEDIATE RUNNER LOCATIONS. SEE STRUCTURAL

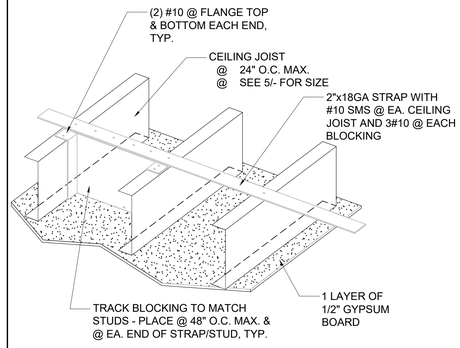
CEILING HT. PARTITION BRACING | 3" = 1'-0" | 15



COMPRESSION STRUT CONNECTION TO ROOF STRUCTURE | 1 1/2" = 1'-0" | 11

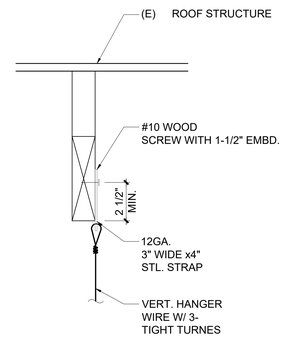


SADDLE TIE-MAIN RUNNER TO HANGER WIRE | 1" = 1'-0" | 7



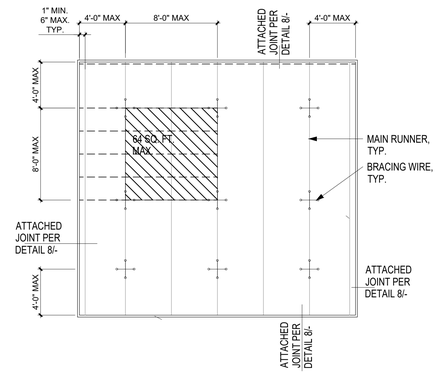
FRAMED CEILING BLOCKING | 1 1/2" = 1'-0" | 3

NOT USED | - | 14



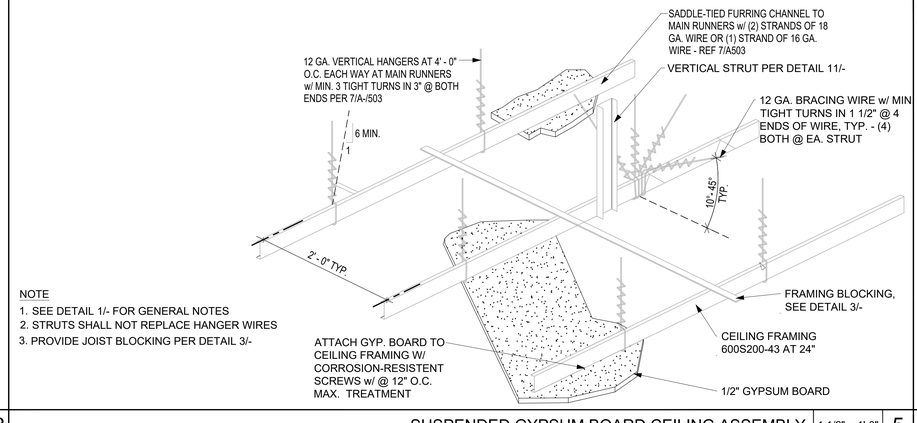
SADDLE TIE-MAIN RUNNER TO HANGER WIRE | 1 1/2" = 1'-0" | 10

NOTES
1. BRACING WIRES AND COMPRESSION STRUTS SHALL OCCUR AT EVERY 64 SQ. FT. MAX IN ROOMS OVER 64 SQUARE FEET
2. TIGHTER SPACING BETWEEN BRACING WIRES AND COMPRESSIONS STRUTS TO ALLOW SMALLER ANCHORS PER 5/A-503 AND 7/A-503 ARE ALLOWED



SUSPENDED GYPSUM BOARD CEILING | 1 1/2" = 1'-0" | 2

NOT USED | | 13



NOTE
1. SEE DETAIL 1/- FOR GENERAL NOTES
2. STRUTS SHALL NOT REPLACE HANGER WIRES
3. PROVIDE JOIST BLOCKING PER DETAIL 3/-

SUSPENDED GYPSUM BOARD CEILING ASSEMBLY | 1 1/2" = 1'-0" | 5

1. CEILINGS SHALL BE INSTALLED AS GENERALLY DEPICTED ON CEILING PLANS, CEILING NOTES, SPECIFICATIONS AND THESE DETAILS
2. HANGER WIRES SHALL BE FASTENED WITH NOT LESS THAN 3 TIGHT TURNS. (BRACING WIRES SHALL BE FASTENED WITH NOT LESS THAN 4 TIGHT TURNS) MAKE ALL TIGHT TURNS WITHIN A DISTANCE OF 1 1/2 INCHES.
3. HANGER WIRE SHALL BE CONNECTED TO STRUCTURE ABOVE PER DETAIL 10/A503
4. COMPRESSION STRUTS SHALL BE PROVIDED FOR LAY-IN AND DRYWALL CEILING EVERY 8'-0" X 12'-0" BAY.
5. COMPRESSION STRUTS SHALL NOT EXCEED 6'-0" IN LENGTH AND HAVE AN L/R RATIO OF 200 MAX. COMPRESSION STRUT TO BE 400S162-43 (18 GA.).
6. COMPRESSION STRUT SHALL BE MECHANICALLY FASTENED TO MAIN RUNNERS WITH 1/4" MACHINE BOLT AND TO STRUCTURE ABOVE PER DETAIL 11/-

GYP. BOARD CEILING GENERAL NOTES | 1 1/2" = 1'-0" | 1

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS

IDS GROUP

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

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REV.	DESCRIPTION	DATE
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PROJECT NO.	18X093.00
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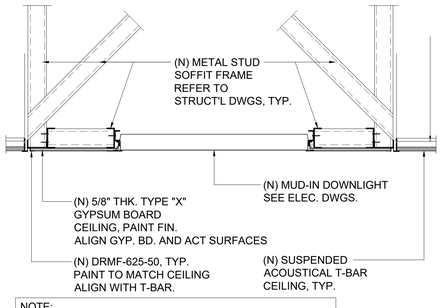
SHEET TITLE

DETAILS

SHEET NUMBER

A-503

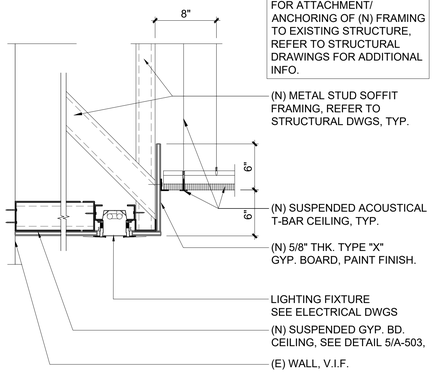
SHEET NO. OF



NOTE:
FOR ATTACHMENT/ANCHORING OF
(N) FRAMING TO EXISTING STRUCTURE, REFER TO
STRUCTURAL DRAWINGS FOR ADDITIONAL INFO.

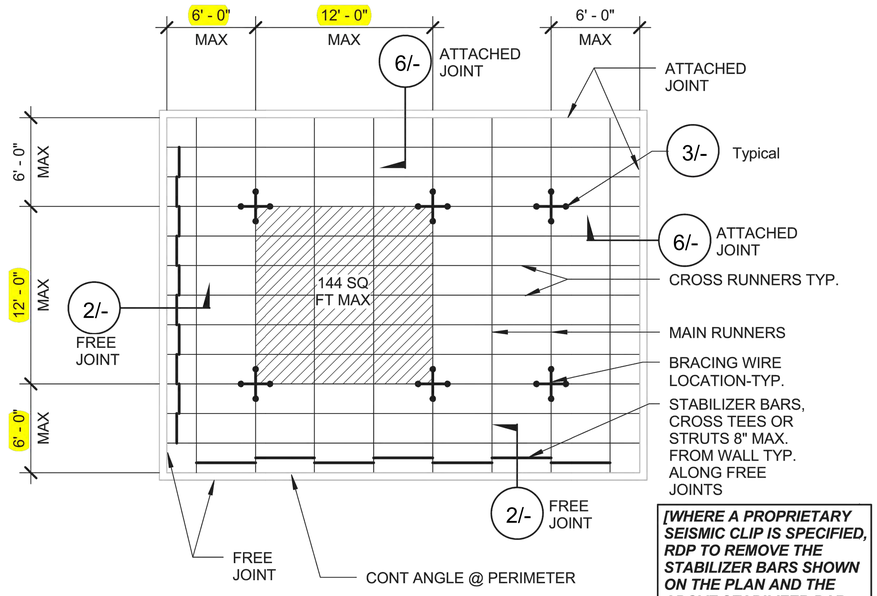
REFER TO DETAIL 15/A-505 FOR NORTH AND SOUTH ENDS

DETAIL @ LOBBY | SCALE: 1"=1'-0" | 20



NOTE:
FOR ATTACHMENT/
ANCHORING OF (N) FRAMING
TO EXISTING STRUCTURE,
REFER TO STRUCTURAL
DRAWINGS FOR ADDITIONAL
INFO.

DETAIL @ LOBBY | SCALE: 1 1/2" = 1'-0" | 19

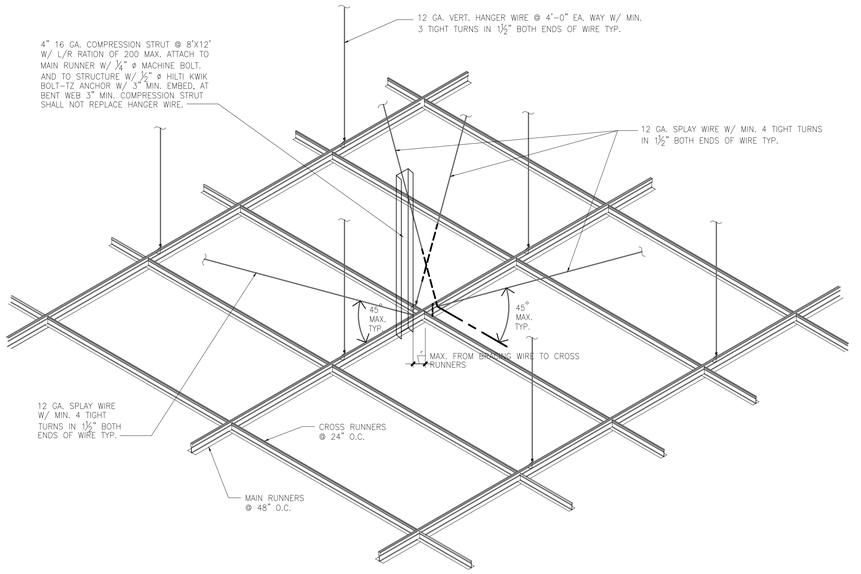


[WHERE A PROPRIETARY SEISMIC CLIP IS SPECIFIED, RDP TO REMOVE THE STABILIZER BARS SHOWN ON THE PLAN AND THE ABOVE STABILIZER BAR NOTE]

NOTE:

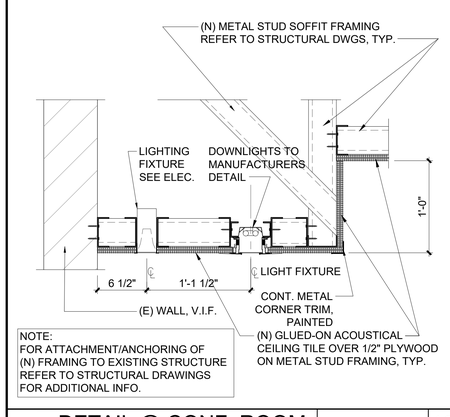
BRACING WIRES AND COMP. STRUT SHALL OCCUR
AT EVERY 144 SQ. FT. MAX. IN ROOMS OVER 144 SQ. FT.
SEE STRUCTURAL

ACOUSTICAL TILE - TYP. BRACE ASSEMBLY PLAN | SCALE: N.T.S. | 11



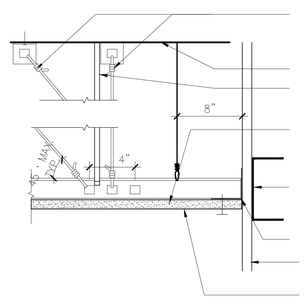
NOTE:
1. SEE DETAIL 13/A-504 FOR CONNECTIONS OF BRACING & HANGER WIRES TO THE STRUCTURE ABOVE.
2. PROVIDE 2'-0"X4'-0" LIGHT FIXTURES (LESS THAN 56 LBS). SUPPORTED ON THE RUNNERS WITH TWO SAETY HANGER WIRES AT DIAGONAL CORNERS.
3. SUSPENDED CEILING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C635, ASTM C636 AND CISCA.
4. SEE 11/– FOR BRACE ASSEMBLY PLAN

ACOUSTICAL TILE - SUSPENSION AND BRACING ASSEMBLY | SCALE: 3" = 1'-0" | 3

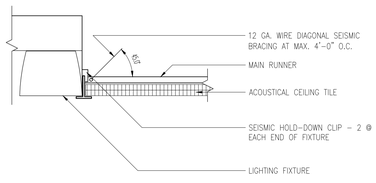


NOTE:
FOR ATTACHMENT/ANCHORING OF
(N) FRAMING TO EXISTING STRUCTURE
REFER TO STRUCTURAL DRAWINGS
FOR ADDITIONAL INFO.

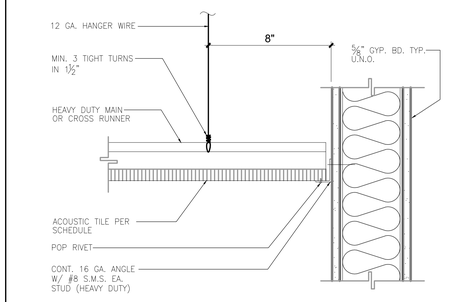
DETAIL @ CONF. ROOM | SCALE: 1 1/2" = 1'-0" | 18



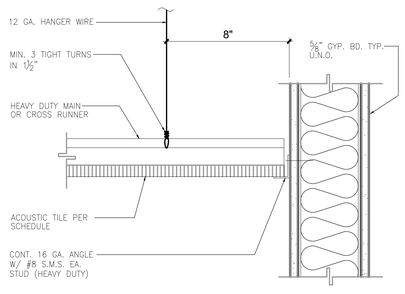
SUSPENSION & BRACING ASSEMBLY | SCALE: 3" = 1'-0" | 14



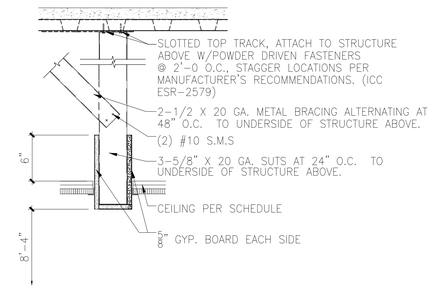
TYP. CEILING FIXTURE BRACING | SCALE: 3" = 1'-0" | 10



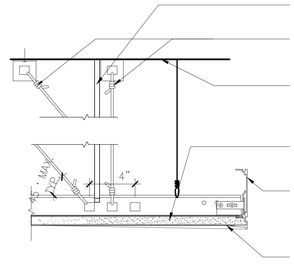
SUSP. CEILING AT FIXED EDGE | SCALE: 3" = 1'-0" | 6



SUSP. CEILING AT FREE EDGE | SCALE: 3" = 1'-0" | 2

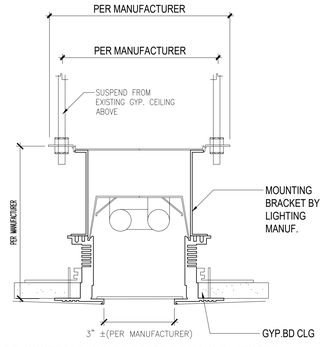


HEADER DETAIL | SCALE: 1 1/2" = 1'-0" | 17



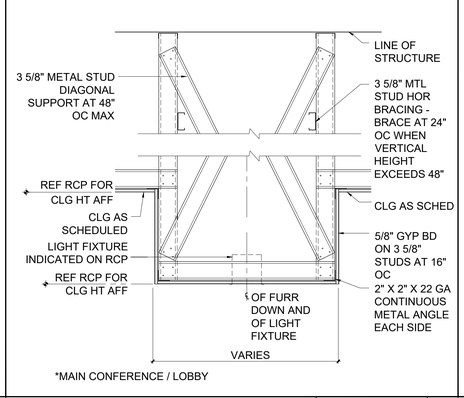
NOTE:
1. AREA OF CEILING SUPPORTED NOT TO EXCEED 144 SQ. FT.
2. MAXIMUM BRACE SPACING NOT TO EXCEED 12'-0" O.C. EACH WAY, 6'-0" MAX. FROM WALL.
3. BRACE POINT ON MAIN RUNNER NOT TO EXCEED 2 INCH DISTANCE FROM CROSS RUNNER.
SEE 11/– FOR BRACE ASSEMBLY PLAN

SUSPENSION & BRACING ASSEMBLY | SCALE: 3" = 1'-0" | 13



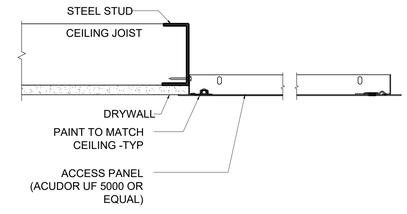
NOTE: CONTRACTORS' TO REFER TO MANUFACTURER'S SEISMIC BRACING DETAILS FOR INSTALLATION INSTRUCTIONS.

RECESSED LIGHT DETAIL | SCALE: 6" = 1'-0" | 9



*MAIN CONFERENCE / LOBBY

CEILING SOFFIT DETAIL | SCALE: 1" = 1'-0" | 5



CEILING ACCESS PANEL | SCALE: 3" = 1'-0" | 1

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IDS
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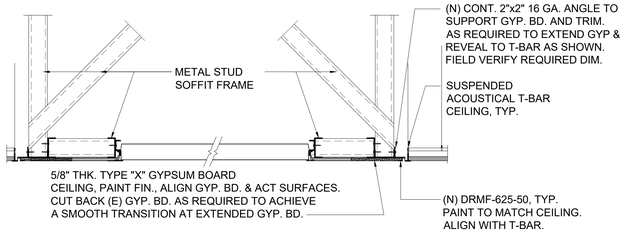
A-504

SHEET NO. OF

20

16

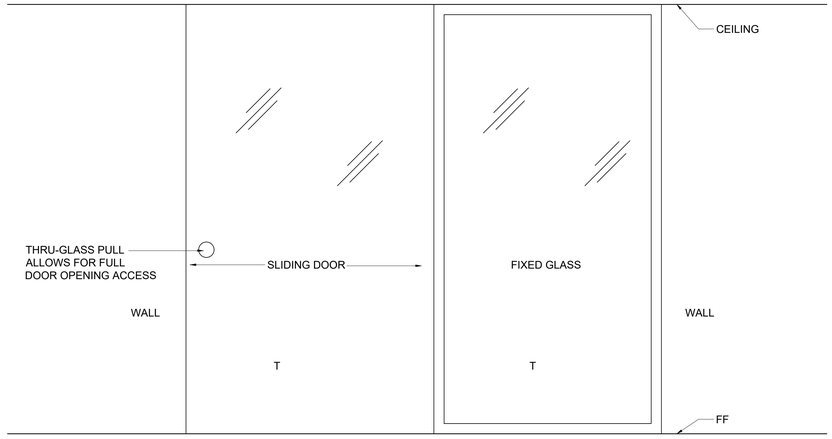


NOTES:
FOR ATTACHMENT/ANCHORING OF (N) FRAMING TO EXISTING STRUCTURE, REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFO.

THIS DETAIL REPRESENTS THE APPROXIMATE 2" GYP. BD. EXTENSION REQUIRED AT THE NORTH AND SOUTH ENDS OF THE GYP CEILING. THE EAST AND WEST SIDES WOULD NOT REQUIRE EXTENSION OF GYP. BD. HOWEVER, T-BAR MAY NEED TO BE REPAIRED THERE IF IT WAS NOT INSTALLED PER PLAN/DETAIL.

VERIFY THAT GYP. BD. CEILING AND T-BAR CEILING ALIGN AND ARE PLUMB AND LEVEL.

LOBBY GYPSUM BOARD CEILING - NORTH AND SOUTH ENDS | SCALE: 1" = 1'-0" | 15



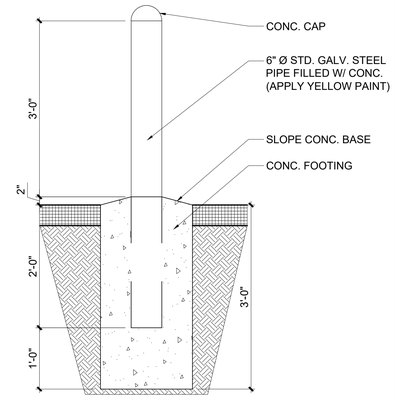
T - TEMPERED GLASS

NOTE: REFER TO MANUFACTURER'S DETAILS AND INSTALLATION INSTRUCTIONS

SLIDING GLASS DOOR ELEVATION | SCALE: 1"=1'-0" | 7

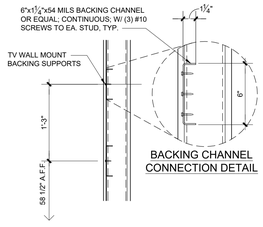
NOTE: TO MATCH EXISTING SIGNAGE MATERIAL AND COLOR. VERIFY

OCCUPANT LOAD SIGNAGE | SCALE: NTS | 4

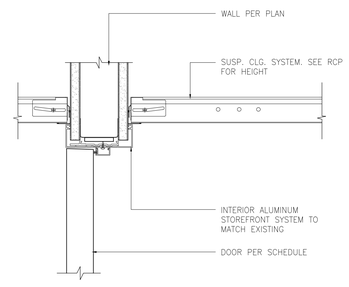


BOLLARD DETAIL | SCALE: 1"=1'-0" | 3

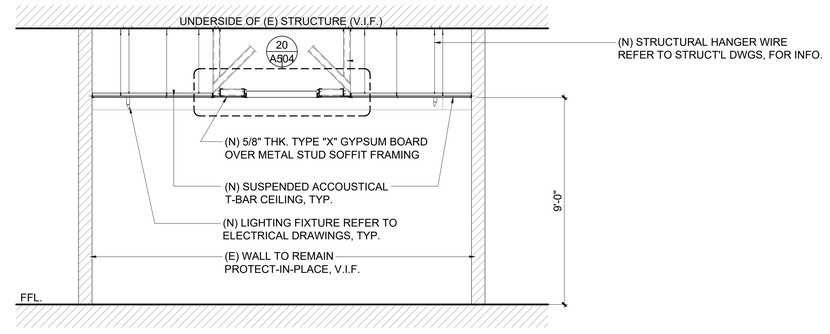
18



TELEVISION BACKING | SCALE: 1" = 1'-0" | 14

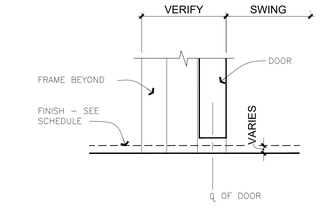


DOOR HEAD | SCALE: 3" = 1'-0" | 10



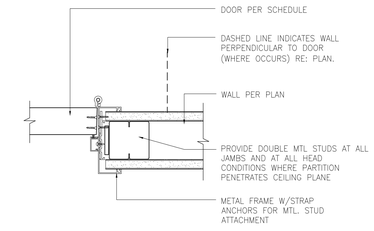
RECESSED CEILING DETAIL AT LOBBY | SCALE: 3/32"=1'-0" | 2

18



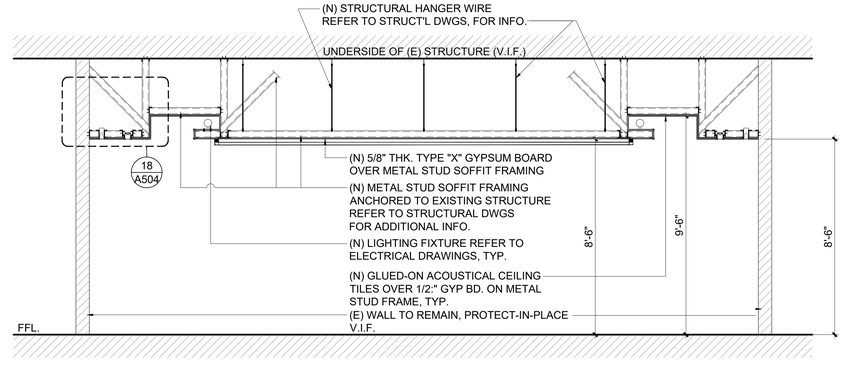
NOTE: PROVIDE DOOR THRESHOLD AND WEATHERSTRIP TO MATCH (E) FOR DOORS SEPARATING CONDITIONED OFFICE SPACE AND EXTERIOR WHERE OCCURS, TYP.

DOOR THRESHOLD | SCALE:3"=1'-0" | 13



NOTE: PROVIDE PAINTABLE CAULK BETWEEN DOOR FRAME & PARTITION WHERE GAPS, HOLES VOIDS, ETC. OCCUR UPON/AFTER INSTALLATION OF DR. FRAME, TYP.

DOOR JAMB | SCALE: 3" = 1'-0" | 9



RECESSED CEILING DETAIL @ CONF. ROOM | SCALE: 3/8" = 1'-0" | 1

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

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SHEET TITLE

DETAILS

SHEET NUMBER

A-505

SHEET NO. OF

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

ADMINISTRATIVE BUILDING - SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

PROJECT DESCRIPTION

THIS PROJECT IS INTENDED TO SUBSTANTIALLY IMPROVE THE SEISMIC PERFORMANCE OF THE BUILDING THROUGH THE UPGRADE OF CONNECTIONS BETWEEN HORIZONTAL AND VERTICAL LATERAL LOAD RESISTING ELEMENTS.

ADDITIONALLY, THE EXISTING FIRE SPRINKLER SYSTEM WILL BE IMPROVED TO A HIGH SEISMIC PERFORMANCE STANDARD BY ADDING DIVERSE TRANSVERSE AND LONGITUDINAL SWAY BRACING.

PROJECT DATA

PROJECT ADDRESS:	18700 WARD STREET FOUNTAIN VALLEY, CA 92708
APN:	156-101-06
BUILDING AREA:	12,280 S.F.
STORIES:	1
CONSTRUCTION TYPE:	V-B, SPRINKLERED
OCCUPANCY:	B

SCOPE OF WORK

THE SCOPE OF WORK FOR THIS PROJECT CONSISTS OF THE FOLLOWING ITEMS:

1. STRENGTHEN THE FOLLOWING SEISMIC ELEMENTS PER ENHANCED SEISMIC PERFORMANCE OF ASCE 41-13:
   - OUT-OF-PLANE ROOF-TO-WALL ANCHORAGE.
   - ROOF DIAPHRAGM SHEAR TRANSFER TO PERIMETER WALLS.
   - ROOF DIAPHRAGM CHORDS.
   - DRAGLINES/COLLECTORS AND CONNECTIONS AT COURTYARD CORNER COLUMNS.
2. STRENGTHEN EXISTING FIRE SPRINKLER SYSTEM THROUGH THE ADDITION OF TRANSVERSE AND LONGITUDINAL BRACING CONSISTENT WITH SEISMIC DESIGN LOAD LEVELS AND TYPICAL DETAILING/PRACTICE FOR ESSENTIAL FACILITIES MEETING CBC/ASCE7 AND NFPA-13 REQUIREMENTS.
3. ADA UPGRADES TRIGGERED BY EXTENT OF SEISMIC IMPROVEMENT WORK IN ACCORDANCE WITH APPLICABLE CODES.

SHEET INDEX

CONTACTS

OWNER:
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708
CONTACT: KELLY HUBBARD, EMERGENCY SERVICE MANAGER
PHONE: 714-593-5010

STRUCTURAL ENGINEER:
IDS GROUP, INC.
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
PHONE: (949) 387-8500

APPLICABLE CODES

2016 CALIFORNIA REFERENCED STANDARDS CODE, PART 1, TITLE 24 C.C.R.

2016 CALIFORNIA BUILDING CODE (CBC), PART 2, TITLE 24 C.C.R.

2016 CALIFORNIA ELECTRICAL CODE (CEC), PART 3, TITLE 24 C.C.R. (2014 NEC)

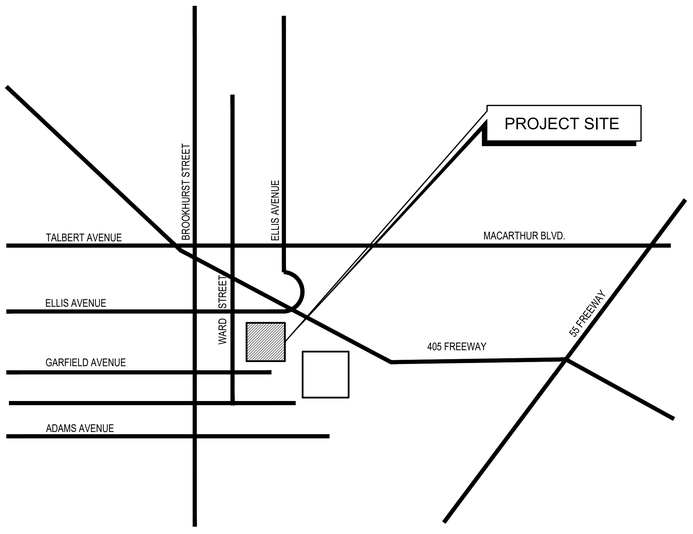
2016 CALIFORNIA FIRE CODE, PART 9, TITLE 24 C.C.R.

2016 CALIFORNIA EXISTING BUILDING CODE, PART 10, TITLE 24 C.C.R.

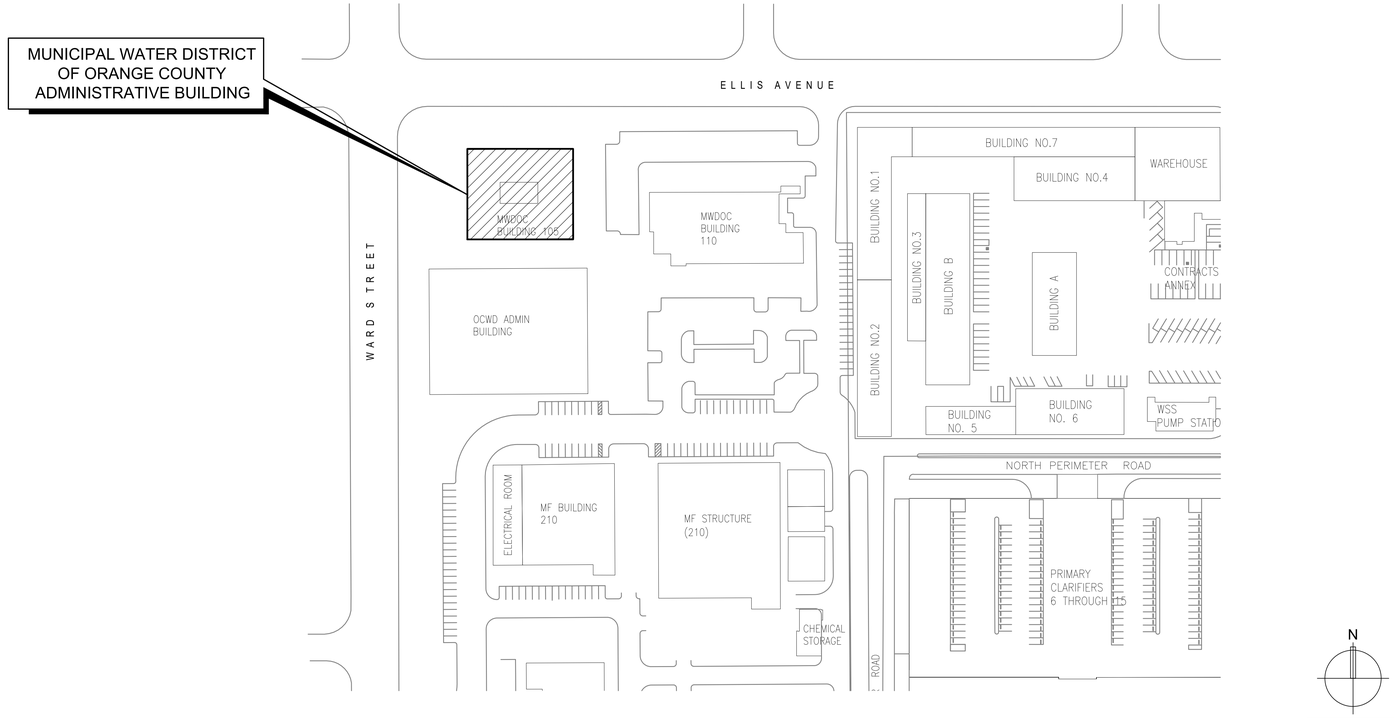
2016 TITLE 19 C.C.R. PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS.

AMERICANS WITH DISABILITIES ACT

VICINITY MAP



SITE PLAN



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COVER SHEET

SHEET NUMBER

T0.0

SHEET NO. OF

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCE STANDARD
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:			
a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	–	X	AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	–	X	–
2. INSPECTION OF HIGH-STRENGTH BOLTING:			
a. SNUG-TIGHT JOINTS.	–	X	AISC 360, SECTION M2.5
b. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION.	–	X	
c. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION.	X	–	
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:			
a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	–	X	AISC 360, SECTION A3.1
b. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	–	X	APPLICABLE ASTM MATERIAL STANDARDS
c. MANUFACTURER'S CERTIFIED TEST REPORTS.	–	X	–
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:			
a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS.	–	X	AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	–	X	–
5. INSPECTION OF WELDING:			
a. STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:			
1) COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS.	X	–	AWS D1.1
2) MULTIPASS FILLET WELDS.	X	–	
3) SINGLE-PASS FILLET WELDS > 5/16"	X	–	
4) PLUG AND SLOT WELDS.	X	–	
5) SINGLE-PASS FILLET WELDS ≤ 5/16"	–	X	
6) FLOOR AND ROOF DECK WELDS.	–	X	AWS D1.3
b. REINFORCING STEEL:			
1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706.	–	X	AWS D1.4 ACI 318: SECTION 3.5.2
2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	X	–	
3) SHEAR REINFORCEMENT.	X		
4) OTHER REINFORCING STEEL.	–	X	
6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:			
a. DETAILS SUCH AS BRACING AND STIFFENING.	–	X	–
b. MEMBER LOCATIONS.	–	X	–
c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION.	–	X	–

REFERENCE STANDARDS FOR CONCRETE REPAIR

CONCRETE REPAIR	ACI RAP-1	STRUCTURAL CRACK REPAIR BY EPOXY INJECTION.
	ACI RAP-2	CRACK REPAIR BY GRAVITY FEED WITH RESIN
	ACI RAP-3	SPALL REPAIR BY LOW-PRESSURE SPRAYING
	ACI RAP-4	SURFACE REPAIR USING FORM-AND-POUR TECHNIQUES
	ACI RAP-5	SURFACE REPAIR USING FORM-AND-PUMP TECHNIQUES
	ACI RAP-6	VERTICAL AND OVERHEAD SPALL REPAIR BY HAND APPLICATION
	ACI RAP-7	SPALL REPAIR OF HORIZONTAL CONCRETE SURFACES

POST-INSTALLED ANCHORAGE INTO MASONRY

1. POST-INSTALLED MECHANICAL ANCHORS INTO MASONRY SHALL BE SIMPSON WEDGE-ALL (ICC-ESR-1396), HILTI KWIK-BOLT 3 (ICC ESR-1385), OR EQUAL. INSTALL ANCHORS IN CONFORMANCE WITH THE ICC REPORT AND MANUFACTURER'S SPECIFICATIONS. COMPLY WITH ACI 530 AND CBC.
2. ALL HOLES SHALL BE DRILLED PER MANUFACTURER'S RECOMMENDATIONS. CORE DRILLED HOLES ARE NOT PERMITTED.
7. CONTRACTOR SHALL DETERMINE LOCATION OF EXISTING REINFORCING STEEL PRIOR TO DRILLING FOR ANCHORS, AND DRILL THE ANCHOR HOLES TO CLEAR THE REINFORCING STEEL PER THESE NOTES. NO REINFORCING STEEL SHALL BE NICKED, CUT OR DAMAGED IN ANY WAY. DAMAGED REINFORCING WILL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST. IF THE LOCATION OF ANCHORS MUST BE MOVED SLIGHTLY TO ACCOMMODATE THE LOCATION OF EXISTING REINFORCING STEEL, THE CONTRACTOR SHALL PREPARED A SLIGHTLY MODIFIED DESIGN OF THE ITEM TO BE ANCHORED AND SUBMIT TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION. THE MODIFIED DESIGN SUGGESTED BY THE CONTRACTOR SHALL INVOLVE THE ABSOLUTE MINIMUM RELOCATION OF ANCHORS TO MEET THE DETAILS AND REQUIREMENTS HEREIN, AND SHALL BE BASED ON A TEMPLATE BY THE CONTRACTOR WHICH ACCURATELY PORTRAYS THE POSITION OF THE ANCHORS.
8. MAINTAIN A MINIMUM CLEARANCE OF 1-INCH BETWEEN THE REINFORCEMENT AND THE POST-INSTALLED ANCHOR.
9. ANCHORS SHALL BE INSTALLED A MINIMUM OF 1-3/8 INCH FROM ANY VERTICAL MORTAR JOINT.
10. ANCHOR LOCATIONS ARE LIMITED TO ONE PER MASONRY CELL, WITH A MINIMUM SPACING OF 8 INCHES ON CENTER.
11. EMBEDMENT SHALL BE MEASURED FROM THE OUTSIDE FACE OF THE CONCRETE MASONRY UNIT.
12. STAINLESS STEEL ANCHORS SHALL BE PROVIDED FOR EXTERIOR EXPOSURES.
13. CONTINUOUS SPECIAL INSPECTION IS REQUIRED.

TEST LOADS, EXPANSION BOLTS INTO MASONRY

ANCHOR DIAMETER (INCH)	MIN. EMBED "A" (INCH)	MIN. EDGE DISTANCE "B" (INCH)	TEST – MIN. TENSION LOAD (LBS)	TEST – MIN. TORQUE (FT-LBS) *
1/4"	1.125"	4"	242 LB	4 FT-LB
		12"	242 LB	
	2"	4"	864 LB	
		12"	864 LB	
3/8"	1.625"	4"	514 LB	15 FT-LB
		12"	546 LB	
	2.5"	4"	1252 LB	
		12"	1252 LB	
1/2"	2.25"	4"	1004 LB	20 FT-LB
		12"	1066 LB	
	3.5"	4"	1448 LB	
		12"	1448 LB	
5/8"	2.75"	4"	1302 LB	65 FT-LB
		12"	1384 LB	
	4"	4"	1998 LB	
		12"	2070 LB	
3/4"	3.25"	4"	1658 LB	120 FT-LB
		12"	1658 LB	
	4.375"	4"	2632 LB	
		12"	2632 LB	

* ANCHORS MUST ATTAIN SPECIFIED TORQUE WITHIN ONE-HALF TURN OF THE NUT.

14. PER 1704A.4 TEST POST-INSTALLAED ANCHORS IN MASONRY USING THE REQUIREMENTS FOR TEST LOADS, FREQUENCY, ACCEPTANCE CRITERIA AND PROCEDURE SET FORTH IN CBC 1913A.7. TEST LOADS SHALL BE IN ACCORDANCE WITH 1913A.7.2, METHOD 2 FOR ANCHORS OTHER THAN MECHANICAL ANCHORS WHICH ARE COVERED IN THE ABOVE TABLE.
15. POST-INSTALLED ADHESIVE ANCHORS SHALL USE HILTI HIT HY 70 PER ICC ESR-2682 FOR ROD DIAMETERS LESS THAN 3/4".

DESIGN CRITERIA

DESIGN CONFORMS TO CBC.

1. LIVE LOADS:
   A. ROOF: 21.5 PSF
2. DEAD LOADS:
   A. SELF WEIGHT
   B. PARTITIONS: 20 PSF
3. SEISMIC ANALYSIS: EQUIVALENT LATERAL FORCE PROCEDURE

   SITE CLASS D
   SEISMIC DESIGN CATEGORY D

   S_S = 1.556 g
   S_1 = 0.579 g
   Fa = 1.0
   Fv = 1.5
   S_{DS} = 1.037 g
   S_{D1} = 0.579 g

STRUCTURAL STEEL

1. THE CONTRACTOR SHALL SUBMIT ALL STRUCTURAL STEEL AND MISCELLANEOUS STEEL SHOP DRAWINGS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
2. MATERIAL TEST OR REPORTS FOR HOT-ROLLED STRUCTURAL SHAPES, PLATES, AND BARS SHALL BE MADE IN ACCORDANCE WITH ASTM A6. FOR SHEET MATERIAL, TEST SHALL BE MADE IN ACCORDANCE WITH ASTM A568. FOR TUBING AND PIPE, SUCH TEST SHALL BE MADE IN ACCORDANCE WITH REQUIREMENTS OF THE APPLICABLE ASTM STANDARDS.
3. HOT ROLLED SHAPES WITH FLANGES 1½" THICK AND THICKER AND BASE PLATE 1½" THICK AND THICKER SHALL HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FL-LB AT 70° F.
4. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING, UNLESS OTHERWISE NOTED:
   A. ANGLES, PLATES AND BARS: ASTM A36 (Fy=36ksi, Fu=58ksi)
   B. W AND WT: ASTM A992 (Fy=50ksi, Fu=65ksi)
   C. RECTANGULAR AND SQUARE HSS: ASTM A1085 (Fy=50ksi, Fu=65ksi)
   D. ROUND HSS: ASTM A1085 (Fy=50ksi, Fu=65ksi)
   E. PIPES: ASTM A53, GRADE B (Fy=35ksi, Fu=60ksi)
   F. BOLTS AT STEEL-TO-STEEL CONNECTIONS: ASTM A325 ST (SNUG-TIGHTENED), TYPE 1; 7/8"ø TYP. U.O.N.
   G. BOLTS AT OTHER APPLICATIONS: ASTM A307
   H. ANCHOR RODS: ASTM F1554, GRADE 36, U.N.O.
   I. THREADED RODS: ASTM A36
   J. NUTS: ASTM A563
   K. WASHERS: ASTM F436
   L. TWIST-OFF-TYPE TENSION-CONTROL BOLT ASSEMBLIES: ASTM F1852
   M. COMPRESSIBLE-WASHER-TYPE DIRECT-TENSION INDICATORS: ASTM F959
   N. STEEL STUD SHEAR CONNECTORS: ASTM A29/A108, AWS D1.1
5. ALL WELDING OF STEEL SHALL CONFORM TO AWS D1.1 AND SHALL BE PERFORMED BY AWS CERTIFIED WELDERS USING E-70XX LOW HYDROGEN MOISTURE RESISTING ELECTRODES UNLESS OTHERWISE NOTED.
6. USE THE MINIMUM SIZE OF WELDS IN ACCORDANCE WITH AISC MANUAL OF STEEL CONSTRUCTION AT STEEL TO STEEL JOINTS UNLESS A LARGER WELDING SIZE IS SPECIFIED ON THE PLANS.
7. ALL STEEL (EXCEPT STAINLESS STEEL) SHALL BE SHOP PRIMED WITH ZINC OXIDE PRIMER UNLESS OTHERWISE NOTED.
8. PAINT ALL STRUCTURAL STEEL WITH WEATHER/RUST RESISTANT PAINT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ARCHITECTURAL DETAILS UNLESS OTHERWISE NOTED.
9. DIAMETER OF BOLT HOLE SHALL BE 1/16" LARGER THAN THE BOLT'S DIAMETER UNLESS OTHERWISE NOTED.
10. IF DRILLING HOLES AT STEEL MEMBERS TO ACCOMMODATE THE CONCRETE OR MASONRY ANCHORS IS REQUIRED, THE DRILLING MUST BE DONE AFTER THE ANCHORS HAVE BEEN INSTALLED. THE HOLES AT STEEL MEMBERS SHALL MATCH THE LOCATION OF INSTALLED ANCHORS.
11. PROVIDE BEVELED WASHERS ON SLOPING SURFACE OF CONNECTIONS FOR FULL BEARING.
12. WHERE LENGTH OF WELDING IS NOT SHOWN, IT SHALL BE FULL LENGTH OF JOINT. ALL BUTT WELDS SHALL BE COMPLETE PENETRATION WELDS UNLESS OTHERWISE NOTED.
13. WHERE SO INDICATED ON THE DRAWINGS, STEEL EXPOSED TO VIEW IS DEFINED AS "ARCHITECTURALLY EXPOSED STRUCTURAL STEEL" (AESS). SEE SPECIFICATIONS.
14. MINIMUM BOLT SPACING FROM CENTER OF STANDARD AISC HOLE AS FOLLOWS, U.N.O.:
    CENTER-TO-CENTER = 3 BOLT DIAMETER
    CENTER-TO-ROLLED EDGE = 1.5 BOLT DIAMETER
    CENTER-TO-SHEARED EDGE = 1.75 BOLT DIAMETER
15. THE NATURAL CAMBER IN BEAMS SHALL BE ORIENTED UP, UNLESS NOTED OTHERWISE. AT CANTILEVERS, THE NATURAL CAMBER SHALL BE ORIENTED SO THAT THE FREE END IS ABOVE THE CONNECTED END. THE TOP OF ALL MEMBERS SHALL BE CLEARLY IDENTIFIED. ALL BEAM CAMBERS SHOWN ON THE PLANS SHALL INCLUDE NATURAL CAMBER.
16. PROVIDE UPWARD CAMBER TO MEMBERS INDICATED TO HAVE CAMBER. AMOUNT MEASURED IN THE FIELD PRIOR TO ERECTION SHALL NOT DEVIATE BY MORE THAN ALLOWED BY THE AISC SPECIFICATION. DO NOT CAMBER MEMBERS OCCURRING BELOW ELEVATOR ENTRANCE DOORS.
17. GALVANIZE ALL STEEL EXPOSED TO WEATHER, UNLESS OTHERWISE NOTED.
18. UNDER NO CIRCUMSTANCES SHALL DRAWINGS BE SCALED OR REFERENCE ELECTRONIC BUILDING INFORMATION BE USED TO DETERMINE ELEVATIONS OR DIMENSIONS.
19. THE CONTRACTOR SHALL ESTABLISH A MASTER SET OF TOP-OF-STEEL DRAWINGS FOR ALL AREAS OF THE BUILDING OR STRUCTURE FOR APPROVAL BY THE ARCHITECT BEFORE BEGINNING FABRICATION OF STRUCTURAL STEEL. THE CONTRACTOR'S MASTER SET OF TOP-OF-STEEL DRAWINGS SHALL BE SUBMITTED AT THE BEGINNING OF THE SHOP DRAWING SUBMITTAL PROCESS. THIS SET OF DRAWINGS SHALL SHOW ALL TOP-OF-STEEL ELEVATIONS, ALL EDGE OF STEEL INFORMATION FOR FLOOR AND ROOF LEVELS, AND ALL STEEL FRAMING DIMENSIONS AT FLOOR AND WALL OPENINGS.

TOLERANCE

1. PERMITTED TOLERANCE SHALL BE ACCORDING TO THE CBC.

GENERAL

1. SCOPE OF WORK: THIS PROJECT INVOLVES SEISMIC RETROFIT OF A 18,000 SF CMU WITH WOOD ROOF BUILDING. WORK INCLUDES OUT-OF-PLANE WALL ANCHORS, CONTINUOUS CROSS-TIES AND A NEW CHORD CONNECTIONS.
2. REFER TO PROJECT SPECIFICATIONS FOR PROJECT REQUIREMENTS.
3. ALL CONSTRUCTION AND WORKMANSHIP, INCLUDING MATERIALS, SHALL CONFORM TO THESE DRAWINGS AND THE CBC.
4. GOVERNING CODE AUTHORITY: FOUNTAIN VALLEY BUILDING AND SAFETY DIVISION.
5. COMPLY FULLY WITH ALL CODES HAVING JURISDICTION OVER THE WORK. IF ANY WORK SHOWN OR INDICATED ON THE DRAWINGS IS IN CONFLICT WITH ANY CODE HAVING JURISDICTION, BRING IT TO THE ATTENTION OF THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK WHICH WOULD BE AFFECTED BY IT.
6. WHERE NOT INDICATED OTHERWISE, THE LATEST EDITION OF ALL CITED DOCUMENTS SHALL GOVERN.
7. THE TERM CBC IN THESE DRAWINGS MEANS 2016 CALIFORNIA BUILDING CODE, CALIFORNIA CODE OF REGULATIONS, TITLE 24, ALL PARTS AND VOLUMES.
8. ALL INFORMATION, DIMENSIONS, AND ELEVATIONS SHOWN OR NOTED TO EXISTING STRUCTURE ARE BASED ON BEST INFORMATION CURRENTLY AVAILABLE AT THE TIME OF THE PREPARATION OF THESE DRAWINGS. NO WARRANTY IS IMPLIED AS TO THE ACCURACY OF EXISTING CONDITIONS. THE CONTRACTOR SHALL REFER TO THE ORIGINAL CONSTRUCTION DOCUMENTS FOR INFORMATION REGARDING EXISTING CONSTRUCTION AND SHALL FIELD VERIFY ALL CONDITIONS. IF CONDITIONS BECOME APPARENT WHICH DIFFER FROM THE CONDITIONS SHOWN HEREIN, THEY SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER. HOWEVER, ANY SIGNIFICANT CONFLICTS SHALL BE RESOLVED AS NOTED.
9. THE CONTRACTOR SHALL:
   A. BECOME FAMILIAR WITH ALL CONTRACT DOCUMENTS.
   B. CHECK ALL DIMENSIONS.
   C. BE RESPONSIBLE FOR COORDINATION OF ALL TRADES TO ASSURE PROPER CONSTRUCTION OF THE PROJECT.
   ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
10. DIMENSIONS: DIMENSIONS TAKE PRECEDENCE OVER SCALE OF DRAWING. RELY ON WRITTEN DIMENSIONS GIVEN AND FIELD VERIFICATION. IF DISCREPANCIES ARE FOUND, NOTIFY THE OWNER BEFORE THE COMMENCEMENT OR RESUMPTION OF WORK. IF NO DIMENSION ARE GIVEN, NOTIFY THE OWNER FOR CLARIFICATIONS. ALL NOTIFICATIONS SHALL BE BY "RFI".
11. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. NOTES AND DETAILS ON DRAWINGS TAKE PRECEDENCE OVER "GENERAL NOTES" AND TYPICAL DETAILS. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED SUBJECT TO PRIOR REVIEW BY THE ENGINEER.
12. CONDITIONS NOTED AS "EXISTING" OR (E) ARE TO REMAIN U.N.O. PROTECT AS REQUIRED. "EXISTING" CONSTRUCTION REMOVED BY THE CONTRACTOR FOR ANY REASON SHALL BE REPLACED TO MATCH EXISTING AT NO ADDITIONAL COST TO THE OWNER. ALL MATERIALS, FEATURES OR CONDITIONS NOT SPECIFICALLY IDENTIFIED AS "EXISTING" OR (E) ARE CONSIDERED NEW WORK AND ARE PART OF THE PROJECT SCOPE OF WORK.
13. ALL EXISTING CONDITIONS, WHETHER OR NOT SPECIFICALLY NOTED ON THE DRAWINGS, SHALL BE VERIFIED PRIOR TO THE COMMENCEMENT OF ANY WORK. DO NOT PROCEED WITH ANY ITEM OR WORK THAT IS REASONABLY QUESTIONABLE WITHOUT ADVISING THE OWNER. OBTAIN DIRECTION FROM THE OWNER AS TO HOW TO PROCEED. SUBMIT ALL QUESTIONS ON "RFI" FORM.
14. ANY DISCREPANCIES FOUND IN THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO COMMENCING ANY WORK.
15. SHOP DRAWINGS REQUIRED BY THE PROJECT SPECIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. DRAWINGS ARE REVIEWED BY THE ENGINEER FOR GENERAL CONFORMANCE TO THE DESIGN. REGARDLESS OF THE ENGINEER'S REVIEW, THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR COMPLETE AND SATISFACTORY SUBMITTAL AND CONFORMANCE TO THE CONTRACT DOCUMENTS. SHOP DRAWINGS WILL BE REJECTED FOR INCOMPLETENESS, LACK OF CALCULATIONS (IF REQUIRED) OR CHANGES WITHOUT PRE-APPROVAL. ALL STRUCTURAL CALCULATIONS AND DRAWINGS AS PART OF THE SHOP DRAWINGS SUBMITTAL SHALL BE SIGNED AND STAMPED BY A CALIFORNIA REGISTERED STRUCTURAL ENGINEER. FOR RESUBMITTALS, ALL CHANGES FROM THE PRIOR SUBMITTAL SHALL BE TIGHTLY ENCLOSED BY A "CLOUD" SO AS TO INDICATE ONLY THOSE AREAS CHANGED. WHEN THE CLOUDED DRAWINGS ARE RESUBMITTED, ONLY THE CLOUDED AREAS WILL BE REVIEWED.
16. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. THE SUPPORTING SERVICES BY THE ENGINEER, WHETHER PERFORMED PRIOR TO, DURING, OR AFTER CONSTRUCTION, ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DRAWINGS AND PROJECT SPECIFICATIONS; BUT THEY DO NOT GUARANTEE THE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSIDERED AS SUPERVISION OF CONSTRUCTION.
17. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR ALL SHORING REQUIRED IN ORDER TO SAFELY ACHIEVE THE FINAL CONSTRUCTION SHOWN ON THE DRAWINGS. THIS INCLUDES, BUT IS NOT LIMITED TO, ANY TYPES OF SHORING REQUIRED FOR SOILS EXCAVATION AND BACKFILL WORK; SUPPORT OF STRUCTURAL ELEMENTS UNTIL THEY HAVE ACHIEVED THE NECESSARY STRENGTH TO PERFORM IN THE FINAL POSITION AND MANNER SHOWN ON THE DRAWINGS; AND SUPPORT OF STRUCTURAL ELEMENTS THAT ARE MODIFIED AND THEREBY REDUCED IN STRENGTH IN ANY WAY DURING CONSTRUCTION AS REQUIRED TO ACHIEVE THE FINAL CONSTRUCTION AS SHOWN ON THE DRAWINGS. ALL SHORING CALCULATIONS AND DRAWINGS SHALL BE STAMPED BY A CALIFORNIA REGISTERED ENGINEER AND SUBMITTED FOR REVIEW PRIOR TO PERFORMING THE WORK.
18. THE CONTRACTOR SHALL COORDINATE ALL UTILITY LOCATIONS WITH OTHER DRAWINGS AND SHALL CONDUCT A DETAILED SURVEY OF EXISTING UTILITIES TO IDENTIFY INTERFERENCES WITH THE NEW CONSTRUCTION. PROMPTLY NOTIFY THE ENGINEER OF ANY INTERFERENCES PRIOR TO PERFORMING THE WORK.
19. IN THE EVENT THAT THERE ARE ANY UTILITIES AFFECTED, ANY MODIFICATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NOT THAT OF THE OWNER. ALL OUTLETS EITHER ELECTRICAL OR MECHANICAL, OR ANY ASSOCIATED REWORK OR MODIFICATIONS WILL BE A PART OF THE BID AND NOT TO BE CONSTRUED AS THE WORK OF THE OWNER. SUFFICIENT DUE DILIGENCE ON THE PART OF THE CONTRACTOR WILL ELIMINATE ANY POTENTIAL ISSUES AND ACCEPTANCE OF THE AGREEMENT SHALL BIND CONTRACTOR TO SAID ACCEPTANCE.
20. LOCATE ALL EMBEDDED ITEMS, REINFORCING STEEL AND TENDONS USING NON-DESTRUCTIVE MEANS PRIOR TO DRILLING OR CORING. DO NOT DAMAGE EMBEDDED ITEMS WITHOUT APPROVAL BY THE STRUCTURAL ENGINEER.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA DURING CONSTRUCTION PERIOD. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTY AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES.
22. PROVIDE BARRICADING AND MAINTAIN ANY REQUIRED LIGHTS, WARNING, AND DIRECTIONAL SIGNS, AND OTHER PROTECTION NEAR AND ABOUT THE AREA OF THE WORK AS MAY BE REQUIRED BY THE OWNER, OR BY ANY OTHER GOVERNING AUTHORITY. PROVIDE NECESSARY MEANS TO PROTECT ANY SURROUNDING ADJACENT SITE STRUCTURES, PROPERTIES, SERVICING UTILITIES, PEDESTRIAN AND VEHICLE WAYS, AND MAINTAIN ALL SAFETY MEASURES UNTIL WORK IS COMPLETED.
23. SECURE THE CONSTRUCTION SITE. ANY PARTS OF WORK AREA WHICH ARE TO BE BARRICADED OR SEALED TO NON-CONSTRUCTION INDIVIDUALS MUST BE COORDINATED WITH AND APPROVED BY THE OWNER BEFORE PROCEEDING WITH THE WORK.
24. PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND ADJACENT STRUCTURE(S), FINISHES AND UTILITIES DURING CONSTRUCTION.
25. PROVIDE AND ENGINEER ALL TEMPORARY STRUCTURAL AND SAFETY ELEMENTS REQUIRED TO ACCOMPLISH THE WORK.
26. THE CONTRACTOR SHALL EXERT EVERY EFFORT TO PREVENT DUST AND CONSTRUCTION DEBRIS FROM CONTAMINATING THE WORK AREA. THESE EFFORTS SHALL INCLUDE BUT NOT BE LIMITED TO PROVIDING A DAILY CLEANUP OF THE CONSTRUCTION AREA. THE CONTRACTOR SHALL REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
27. CUTTING, BORING, SAW-CUTTING OR DRILLING THROUGH NEW STRUCTURAL MEMBERS OTHER THAN THOSE DETAILED ON STRUCTURAL DRAWINGS SHALL NOT BE DONE WITHOUT THE ENGINEER'S APPROVAL.
28. PERFORM ALL PATCHING AND RESTORATION AS REQUIRED BY THE WORK. THE WORK SHALL MATCH ADJACENT SURFACES UNLESS SPECIFICALLY NOTED OTHERWISE TO THE SATISFACTION OF THE OWNER.

CLIENT

MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS
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STAMP

STAMP

ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

S1.0

SHEET NO. OF

ABBREVIATIONS

@	AT	K	KIPS; 1000
&	AND	K.P.	KING POST
A.B.	ANCHOR BOLT		
ABV.	ABOVE	LAT.	LATERAL
ADD'L. (ADDL.)	ADDITIONAL	L.B.	LAG BOLT
ADJ.	ADJACENT	LB (#)	POUND
ALT.	ALTERNATE	L.F.	LINEAL FEET (FOOT)
ALUM.	ALUMINUM	LLH	LONG LEG HORIZONTAL
APPRX. (APPROX.)	APPROXIMATE(LY)	LLV	LONG LEG VERTICAL
ARCH.	ARCHITECT(URAL)	LT. WT.	LIGHT WEIGHT
BLDG.	BUILDING	MAX.	MAXIMUM
BLKG.	BLOCKING	M.B.	MACHINE BOLT
BLW.	BELOW	MECH.	MECHANICAL
BM.	BEAM	M.E.P.	MECHANICAL, ELECTRICAL AND PLUMBING
B.N.	BOUNDARY NAILING		
BNDRY.	BOUNDARY	MEZZ.	MEZZANINE
B.O.C.	BOTTOM OF CONCRETE	MFR.	MANUFACTURER
B.O.F.	BOTTOM OF FOOTING	MIN.	MINIMUM
BOT. (B)	BOTTOM	MISC.	MISCELLANEOUS
BRCG.	BRACING	MTL.	METAL
BRDG.	BRIDGE (ING)		
BRG.	BEARING	(N)	NEW
BTWN.	BETWEEN	NO. (#)	NUMBER
		N.S.	NEAR SIDE
CAMB. (C)	CAMBER(ED)	N.T.S.	NOT TO SCALE
CBC	CALIFORNIA BUILDING CODE		
CANT.	CANTILEVER(ED)	O/C (O.C.)	ON CENTER
C.F.	CUBIC FEET (FOOT)	O.D.	OUTSIDE DIAMETER
C.I.P.	CAST–IN–PLACE	O.H.	OPPOSITE HAND
C.I.D.H.	CAST–IN–DRILLED HOLE	OPNG.	OPENING
C.J.	CONTROL JOINT; CONSTRUCTION JOINT	OPP.	OPPOSITE
		ORTHO.	ORTHOGONAL
C.L. (℄)	CENTER LINE	O.W.J.	OPEN WEB JOIST
CLG.	CEILING		
CLR.	CLEAR	PC	PILE CAP
COL.	COLUMN	PCF	POUNDS PER CU.FT.
CONC.	CONCRETE	PL.	PLATE
CONN.	CONNECTION	PLYWD.	PLYWOOD
CONST.	CONSTRUCTION	P.P.	PARTIAL–PENETRATION
CONT.	CONTINUOUS	P.S.F.	POUNDS PER SQUARE FOOT
C.P.	COMPLETE–PENETRATION		
CTSK.	COUNTERSINK	P.S.I.	POUNDS PER SQUARE INCH
CTR.	CENTER(ED)		
C.Y.	CUBIC YARD	PT	PRETENSIONED
		P.T.	PRESSURE TREATED
d	d PENNY NAIL		
DBA	DEFORMED BAR ANCHOR	QTY.	QUANTITY
DBL.	DOUBLE		
DEPT.	DEPARTMENT		
D.F.	DOUGLAS FIR		
DIA. (ø)	DIAMETER	RAD. (R)	RADIUS
DIAG.	DIAGONAL	RBS	REDUCED BEAM SECTION
DIAPH.	DIAPHRAGM	REF.	REFERENCE
DIM.	DIMENSION	REINF.	REINFORCEMENT (ING)
DN.	DOWN	REQ'D. (REQD.)	REQUIRED
DO	DITTO (REPEAT)	RF.	ROOF
DWG. (DWGS.)	DRAWING(S)	R.O.	ROUGH OPENING
DWL.	DOWEL		
		S.A.D.	SEE ARCHITECTURAL DRAWINGS
EA.	EACH	SC	SLIP–CRITICAL
E.F.	EACH FACE	S.C.D.	SEE CIVIL DRAWINGS
E.J.	EXPANSION JOINT	SCH.	SCHEDULE
EL.	ELEVATION	SEP.	SEPARATION
ELEC.	ELECTRICAL	SHT.	SHEET
ELEV.	ELEVATOR	SIM.	SIMILAR
EMB.	EMBED(MENT)	SKW.	SKEW(ED)
E.N.	EDGE NAIL	S.O.G.	SLAB–ON–GRADE
ENG.	ENGINEER	SPEC.	SPECIFICATION
EQ.	EQUAL	SQ.	SQUARE
EQPT.	EQUIPMENT	ST.	SNUG–TIGHTENED
EQUIV.	EQUIVALENT	STD.	STANDARD
EXP.	EXPANSION	STAGG.	STAGGER(ED)
EXIST. (E)	EXISTING	STIFF.	STIFFENER
EXT.	EXTERIOR	STIR.	STIRRUP
		STL.	STEEL
FDN.	FOUNDATION	STRUC(T).	STRUCTURAL
FIN.	FINISH(ED)	SUSP.	SUSPENDED
FLR.	FLOOR	SYMM.	SYMMETRICAL
F.N.	FIELD NAIL; FACE NAIL		
F.O.C.	FACE OF CONCRETE	T&B	TOP AND BOTTOM
F.O.M.	FACE OF MASONRY	T&G	TONGUE AND GROOVE
F.O.S.	FACE OF STUD	TEMP.	TEMPORARY
F.O.W.	FACE OF WALL	THK.	THICK(NESS)
F.P.	FULL (COMPLETE) PENETRATION	T.N.	TOE NAIL
FRP	FIBER REINFORCED POLYMER	T.O.	TOP OF
F.S.	FAR SIDE	T.O.C.	TOP OF CONCRETE
FT. (')	FOOT (FEET)	T.O.S.	TOP OF STEEL; TOP OF SHEATHING
FTG.	FOOTING		
F.V.	FIELD VERIFY	T.O.W.	TOP OF WALL
		TRANS.	TRANSVERSE
GA.	GAUGE	T.S.G.	TAPERED STEEL GIRDER
GALV.	GALVANIZE(D)	TYP.	TYPICAL
GLB.	GLU–LAM/GLULAM GLUED LAMINATED BEAM		
GRD.	GRADE	U.O.N. (U.N.O.)	UNLESS OTHERWISE NOTED
GYP.	GYPSUM	UTIL.	UTILITY
HD.	HOLDOWN; HAND	VERT. (V)	VERTICAL
HDR.	HEADER	V.I.F.	VERIFY IN FIELD
HGR.	HANGER	W/	WITH
HORIZ. (H)	HORIZONTAL	(W)	WIDE; WIDTH
H.S.	HEADED STUD	WD.	WOOD
H.S.B.	HIGH STRENGTH BOLT	W.P.	WORK POINT
HT.	HEIGHT	WT.	WEIGHT
		W.W.F.	WELDED WIRE FABRIC
I.D.	INSIDE DIAMETER		
IN. (")	INCH(ES)	X–STG	EXTRA STRONG
INFO.	INFORMATION	XX–STG	DOUBLE EXTRA STRONG
JST.	JOIST		
JT.	JOINT		

SHOP DRAWINGS, SUBMITTALS AND REVIEW BY THE ENGINEER

1. SHOP DRAWINGS ARE NOT CONTRACT DOCUMENTS AND MAY NOT BE USED AS A BASIS FOR CONSTRUCTING THE WORK IN A MANNER DIFFERENT FROM WHAT IS SHOWN IN THE CONTRACT DOCUMENTS. THE PURPOSE OF THE SHOP DRAWING REVIEW BY THE ENGINEER IS TO HELP THE CONTRACTOR UNDERSTAND AND IMPLEMENT THE DESIGN SHOWN ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS. IF DEVIATIONS, DISCREPANCIES OR CONFLICTS BETWEEN THE SHOP DRAWINGS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER THE SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER, THE CONTRACT DOCUMENTS SHALL CONTROL AND SHALL BE FOLLOWED.
2. SHOP DRAWINGS ARE REVIEWED BY THE ENGINEER SOLELY TO AID IN ASSESSING THE CONTRACTOR'S GENERAL CONFORMANCE WITH THE DESIGN REQUIREMENTS AND INTENT. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTABILITY, COMPATIBILITY WITH THE RELATED COMPONENTS OR ASSEMBLIES, DIMENSIONS, QUANTITIES, WEIGHTS OR GAUGES, AND THE LIKE. THE CONTRACTOR IS NOT RELIEVED FROM COMPLIANCE WITH THE CONTRACT DOCUMENTS, OR FROM ANY CODE OR OTHER LEGAL REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFIRMING AND COORDINATING ALL DIMENSIONS; FOR CONSTRUCTION MEANS & METHODS AND SAFETY PRECAUTIONS; AND FOR ANY DEVIATIONS FROM THE PLANS AND SPECIFICATIONS NOT CLEARLY IDENTIFIED BY THE ENGINEER.

NAILING

CONNECTION	FASTENING [a, m]	LOCATION
1. JOIST TO SILL OR GIRDER	3 – 8d COMMON (2½" x 0.131")	TOENAIL
2. BRIDGING TO JOIST	2 – 8d COMMON (2½" x 0.131")	TOENAIL EACH END
3. 1" x 6" SUBFLOOR OR LESS TO EACH JOIST	2 – 8d COMMON (2½" x 0.131")	FACE NAIL
4. WIDER THAN 1" x 6" SUBFLOOR TO EACH JOIST	3 – 8d COMMON (2½" x 0.131")	FACE NAIL
5. 2" SUBFLOOR TO JOIST OR GIRDER	2 – 16d COMMON (3½" x 0.162")	BLIND AND FACE NAIL
6. SOLE PLATE TO JOIST OR BLOCKING	16d (3½" x 0.135") AT 16" O.C.	TYPICAL FACE NAIL
SOLE PLATE TO JOIST OR BLOCKING AT PANELS BRACED WALL PANEL	3 – 16d (3½" x 0.135") AT 16" O.C.	BRACED WALL
7. TOP PLATE TO STUD	2 – 16d COMMON (3½" x 0.162")	END NAIL
8. STUD TO SOLE PLATE	4 – 8d COMMON (2½" x 0.131") 2 – 16d COMMON (3½" x 0.162")	TOENAIL END NAIL
9. DOUBLE STUDS	16d (3½" x 0.135") AT 24" O.C.	FACE NAIL
10. DOUBLE TOP PLATES DOUBLE TOP PLATES	16d (3½" x 0.135") AT 16" O.C. 8 – 16d COMMON (3½" x 0.162")	TYPICAL FACE NAIL LAP SPLICE
11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3 – 8d COMMON (2½" x 0.131")	TOENAIL
12. RIM JOIST TO TOP PLATE	8d (2½" x 0.131") AT 6" O.C.	TOENAIL
13. TOP PLATES, LAPS AND INTERSECTIONS	2 – 16d COMMON (3½" x 0.162")	FACE NAIL
14. CONTINUOUS HEADER, TWO PIECES	16d COMMON (3½" x 0.162")	16" O.C. ALONG EDGE
15. CEILING JOISTS TO PLATE	3 – 8d COMMON (2½" x 0.131")	TOENAIL
16. CONTINUOUS HEADER TO STUD	4 – 8d COMMON (2½" x 0.131")	TOENAIL
17. CEILING JOISTS, LAPS OVER PARTITIONS (NOTE q.)	3 – 16d COMMON (3½" x 0.162") MINIMUM, TABLE 2308.10.4.1	FACE NAIL
18. CEILING JOISTS TO PARALLEL RAFTERS (NOTE q.)	3 – 16d COMMON (3½" x 0.162") MINIMUM, TABLE 2308.10.4.1	FACE NAIL
19. RAFTER TO PLATE (NOTE 4.)	3 – 8d COMMON (2½" x 0.131")	TOENAIL
20. 1" DIAGONAL BRACE TO EACH STUD AND PLATE	2 – 8d COMMON (2½" x 0.131")	FACE NAIL
21. 1" x 8" SHEATHING TO EACH BEARING	3 – 8d COMMON (2½" x 0.131")	FACE NAIL
22. WIDER THAN 1" x 8" SHEATHING TO EACH BEARING	3 – 8d COMMON (2½" x 0.131")	FACE NAIL
23. BUILT–UP CORNER STUDS	16d COMMON (3½" x 0.162")	24" O.C.
24. BUILT–UP GIRDER AND BEAMS	20d COMMON (4" x 0.192") AT 32" O.C. 2 – 20d COMMON (4" X 0.192")	FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES FACE NAIL AT ENDS AND AT EACH SPLICE
25. 2" PLANKS	16d COMMON (3½" x 0.162")	AT EACH BEARING
26 .COLLAR TIE TO RAFTER	3 – 10d COMMON (3" x 0.148")	FACE NAIL
27. JACK RAFTER TO HIP	3 – 10d COMMON (3" x 0.148") 2 – 16d COMMON (3½" x 0.162")	TOENAIL FACE NAIL
28. ROOF RAFTER TO 2–BY RIDGE BEAM	2 – 16d COMMON (3½" x 0.162") 2 – 16d COMMON (3½" x 0.162")	TOENAIL FACE NAIL
29. JOIST TO BAND JOIST	3 – 16d COMMON (3½" x 0.162")	FACE NAIL
30. LEDGER STRIP	3 – 16d COMMON (3½" x 0.162")	FACE NAIL AT EACH JOIST
31. WOOD STRUCTURAL PANELS AND PARTICILEBOARD [b] SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING)	½" AND LESS 6d[c, l] 19/32" TO ¾" 8d[d] OR 6d[e] ⅞" TO 1" 10d[d] OR 8d[e] 1⅛" TO 1¼" 10d[d] OR 8d[e]	
SINGLE FLOOR (COMBINATION SUBFLOOR – UNDERLAYMENT TO FRAMING)	¾" AND LESS 6d[e] ⅞" TO 1" 8d[e] 1⅛" TO 1¼" 10d[d] OR 8d[e]	
32. PANEL SIDING (TO FRAMING)	½" AND LESS 6d[f] 5/8" 8d[f]	
33. FIBERBOARDING SHEATHING[g]	½" 6d COMMON NAIL (2" x 0.113") 25/32" 8d COMMON NAIL (2½" x 0.131")	
34. INTERIOR PANELING	¼" 4d[j] ⅜" 6d[k]	

a. COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.
b. NAILS SPACED AT 6 INCHES ON CENTER AT EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS EXCEPT 6 INCHES AT SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLE BOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
c. COMMON OR DEFORMED SHANK (6d – 2" x 0.113"; 8d – 2½" x 0.131"; 10d – 3" x 0.148").
d. COMMON (6d – 2" x 0.113"; 8d – 2½" x 0.131"; 10d – 3 x 0.148").
e. DEFORMED SHANK (6d – 2" x 0.113"; 8d – 2½" x 0.131"; 10d – 3" x 0.148").
f. CORROSION–RESISTANT SIDING (6d – 1⅞" x 0.106"; 8d – 2⅜" x 0.128") OR CASING (6d – 2" x 0.099"; 8d – 2½" x 0.113") NAIL.
g. FASTENERS SPACED 3 INCHES ON CENTER AT EXTERIOR EDGES AND 6 INCHES ON CENTER AT INTERMEDIATE SUPPORTS, WHEN USED AS STRUCTURAL SHEATHING. SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NON–STRUCTURAL APPLICATIONS.
h. CORROSION–RESISTANT ROOFING NAILS WITH 7/16–INCH–DIAMETER HEAD AND 1½–INCH LENGTH FOR ½–INCH SHEATHING AND 1¾–INCH LENGTH FOR 25/32–INCH SHEATHING.
i. CORROSION–RESISTANT STAPLES WITH NOMINAL 7/16–INCH CROWN OR 1–INCH CROWN AND 1¼–INCH LENGTH FOR ½–INCH SHEATHING AND 1½–INCH LENGTH FOR 25/32–INCH SHEATHING. PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED).
j. CASING (1½" x 0.080") OR FINISH (1½" X 0.072") NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
k. PANEL SUPPORTS AT 24 INCHES. CASING OR FINISH NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
l. FOR ROOF SHEATHING APPLICATIONS, 8d NAILS (2½" x 0.113") ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS.
m. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16 INCH.
n. FOR ROOF SHEATHING APPLICATIONS, FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.
o. FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS FOR SUB–FLOOR AND WALL SHEATHING AND 3 INCHES ON CENTER AT EDGES, 6 INCHES AT INTERMEDIATE SUPPORTS FOR ROOF SHEATHING.
p. FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.
q. CEILING JOIST AND RAFTER CONSTRUCTION SHALL BE IN ACCORDANCE WITH CBC SECTION 2308.10.

WOOD

1. WOOD MEMBERS SHALL BE DOUGLAS FIR–LARCH PER WCLIB OR WWPA, VISUALLY GRADED DIMENSION LUMBER AND SHALL BE SURFACED DRY (19% MOISTURE CONTENT MAXIMUM). ALL LUMBER SHALL BEAR THE GRADE STAMP OF AN APPROVED TESTING AGENCY, EXCEPT EXPOSED LUMBER AT VISIBLE AREAS. STRUCTURAL FRAMING MEMBERS SHALL BE S4S AND GRADE MARKED AS No.1.
2. PLYWOOD SHEATHING SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF U.S. PRODUCT STANDARDS PS 1–95. STRUCTURAL USE PANELS SHALL CONFORM TO NER–108 (APA–PRP–108). EACH PANEL SHALL BE IDENTIFIED WITH THE APPROPRIATE A.P.A. GRADE STAMP.
3. ROOF SHEATHING SHALL BE FIVE PLY WITH THICKNESS AND PANEL INDEX AS INDICATED ON DRAWINGS. STAGGER SHEETS PER PLAN. ROOF NAILING SHALL BE PER SCHEDULE ON DRAWINGS. OR AS INDICATED ON NOTES. INSTALL SHEETS WITH FACE GRAIN ACROSS SUPPORTS EXCEPT WHERE NOTED OTHERWISE.
4. ROOF AND FLOOR SHEATHING, AND SHEAR WALL PANELS NAILING AND INSTALLATION SHALL BE INSPECTED AND APPROVED PRIOR TO COVERING.
5. BOLTS SHALL CONFORM TO ASTM A307. ALL BOLTS THROUGH WOOD SHALL HAVE STANDARD WASHERS. BOLT HOLES SHALL BE BORED 1/32" TO 1/16" LARGER THAN THE BOLT DIAMETER UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE TIGHTENED PRIOR TO BEING COVERED.
WHERE PLATE WASHERS ARE SHOWN ON THE DRAWINGS THEY SHALL BE AS FOLLOWS:

MINIMUM SIZE FOR SQUARE PLATE WASHERS	
BOLT SIZE	PLATE SIZE
½"	3/16" x 2" x 2"
⅝ "	¼" x 2½" x 2½"
¾"	5/16" x 2¾" x 2¾"
⅞"	5/16" x 3" x 3"
1"	⅜" x 3½" x 3½"

6. NAILS SHALL BE COMMON WIRE NAILS (0131"ø x 2½" FOR 8d; 0148"ø x 3" FOR 10d; 0.148"ø x 3¼" FOR 12d; 0.162"ø x 3½" FOR 16d) OR ACCESSORIES OF HARDWARE CONNECTORS. SEE CBC FOR MINIMUM NAILING SCHEDULE AT CONNECTIONS.
7. HARDWARE CONNECTORS AND ACCESSORIES SHALL BE SIMPSON STRONG–TIE CONNECTORS OR APPROVED EQUAL.
8. NONBEARING PARTITIONS SHALL BE MINIMUM 2x4 STUD AT MAXIMUM 16" ON CENTER WITH TOP AND SILL PLATES AS SHOWN IN THE APPLICABLE DETAILS UNLESS OTHERWISE NOTED.
9. PLYWOOD NAILING SHALL HAVE A MINIMUM EDGE DISTANCE OF 3/8". NAIL HEADS SHALL BE FLUSH WITH TOP SURFACE OF PLYWOOD; SINKING NAIL HEADS IS PROHIBITED.
10. PROVIDE PLYWOOD EDGE NAILING AROUND THE PLYWOOD OPENINGS AND ALONG THE FULL HEIGHT OF ALL WOOD POSTS AND COLUMNS.
11. LAG SCREWS SHALL BE SCREWED, NOT DRIVEN, INTO WOOD MEMBERS WITH PRE–DRILLED HOLES. PRE–DRILLED HOLE DIAMETER IN SOFT STRUCTURAL WOODS SHALL EQUAL SCREW SHANK DIAMETER AT THE SCREW SHANK, AND SHALL BE UNDERSIZED BY 25% OF SCREW DIAMETER AT THE SCREW THREADS. FOR EXAMPLE, FOR A 3/8" SCREW, THE PRE–DRILLED HOLE SHALL BE 3/8" OVER THE LENGTH OF THE SCREW SHANK, AND SHALL BE 9/32" OVER THE LENGTH OF THE SCREW THREADS. FOR HARD WOODS USED IN A STRUCTURAL APPLICATION, PRE–DRILLED HOLE DIAMETER AT THE SHANK SHALL MATCH THE SCREW DIAMETER, AND THE HOLE DIAMETER OVER THE LENGTH OF THE SCREW THREADS SHALL BE UNDERSIZED BY 12.5% OF THE SCREW DIAMETER.
12. SILL PLATES IN DIRECT CONTACT WITH CONCRETE, MASONRY, OR EARTH, SHALL BE PRESSURE TREATED WOOD OR APPROVED EQUAL. PRESSURE TREATED WOOD SHALL BE TREATED WITH ALKALINE COPPER QUAT (ACQ–C AND ACQ–D), CARBONATE AZOLE (CBA–A), OR COPPER AZOLE (CA–B).
13. PROVIDE DOUBLE OR 4x FLOOR JOIST UNDER PARALLEL, NON–BEARING PARTITION WALL UNLESS OTHERWISE NOTED.
14. PROVIDE LAMINATED DOUBLE STUDS UNDER EACH SUPPORT OF BEAMS UNLESS OTHERWISE NOTED.
15. SOLID BLOCKING SHALL BE PLACED BETWEEN JOISTS AT POINTS OF SUPPORT AND POINTS WHERE SHEATHING IS DISCONTINUOUS.
16. APPLY ADHESIVE TO CONTACT SURFACES BETWEEN HORIZONTAL PLYWOOD SHEATHING AND SUPPORTING WOOD MEMBER.
17. WOOD MEMBER WITH WANE SHALL NOT BE LOCATED AT PLYWOOD JOINT.
18. NO STRUCTURAL MEMBER SHALL BE CUT WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER.
19. HARDWARE CONNECTING WOOD MEMBERS SHALL BE RECESSED WHEN REQUIRED BY ARCHITECTURAL FINISH. VERIFY WITH ARCHITECTURAL DRAWINGS.
20. 0.229"x2"x2" STEEL PLATE WASHERS (OR SIMPSON BP) SHALL BE USED FOR ALL SILL PLATE ANCHOR BOLTS AND HOLDOWN CONNECTOR BOLTS UNLESS OTHERWISE NOTED. SIMPSON BP SHALL BE PROTECTED WITH ZMAX (G185) COATING.
21. ALL BOLTS SHALL BE RE–TIGHTENED JUST PRIOR TO BEING COVERED.
22. BOLT HOLES AT WOOD MEMBERS SHALL NOT BE MORE THAN 1/16" LARGER THAN THE BOLT DIAMETER.
23. ALL HARDWARE AND FASTENERS IN CONTACT WITH TREATED WOOD SILL PLATES SHALL BE ZINC– COATED. ALL NAILS INTO TREATED SILL PLATES SHALL BE HOT–DIPPED ZINC–COATED GALVANIZED OR SIMPSON ZMAX (G185) COATED NAILS.
24. SOLID BLOCKING OR EQUIVALENT CROSS–BRIDGING SHALL BE INSTALLED BETWEEN ALL ROOF AND FLOOR JOISTS AT THE SPACING PER CODE.
25. FIRE BLOCKING SHALL BE INSTALLED BETWEEN ALL WALL STUDS IF REQUIRED BY CODE.

STRUCTURAL OBSERVATION

1. THE OWNER SHALL EMPLOY THE ENGINEER OF RECORD REGISTERED/LICENSED IN THE STATE OF CALIFORNIA WHO IS RESPONSIBLE FOR THE STRUCTURAL DESIGN, TO DO STRUCTURAL OBSERVATION.
2. THE STRUCTURAL OBSERVATION IS REQUIRED FOR THE STRUCTURAL SYSTEM IN ACCORDANCE WITH CBC SECTION 1704. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE ELEMENTS AND CONNECTIONS OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETE STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE PROJECT INSPECTOR, DEPUTY INSPECTOR, SPECIAL INSPECTOR OR CITY INSPECTOR.
3. STRUCTURAL OBSERVER OF RECORD : SAID HILMY, S3680
4. THE STRUCTURAL OBSERVER SHALL PERFORM SITE VISITS AT THOSE STEPS IN THE PROGRESS OF THE CONSTRUCTION THAT ALLOW FOR CORRECTION OF DEFICIENCIES WITHOUT SUBSTANTIAL EFFORT OR UNCOVERING OF THE WORK INVOLVED. AT A MINIMUM, THE FOLLOWING SIGNIFICANT CONSTRUCTION STAGES REQUIRE A SITE VISIT AND AN OBSERVATION REPORT FROM THE STRUCTURAL OBSERVER.

   CONSTRUCTION STAGE ELEMENTS/CONNECTIONS TO BE OBSERVED;
   A. FOLLOWING RETROFIT/PRIOR TO COVERING WITH FINISH.
5. OBSERVED DEFICIENCIES: ANY OBSERVED DEFICIENCIES SHALL BE DESCRIBED ON THE FORM; THE OBSERVER SHALL ALSO INDICATE WHETHER A RE–OBSERVATION IS REQUIRED TO VERIFY CORRECTIVE ACTIONS HAVE BEEN PROPERLY TAKEN OR THAT THE CORRECTIVE ACTIONS ARE DEEMED VERIFIABLE BY THE SPECIAL INSPECTOR OR CITY INSPECTOR PRIOR TO INSPECTION APPROVAL.

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

STAMP

ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

SHEET TITLE

GENERAL NOTES

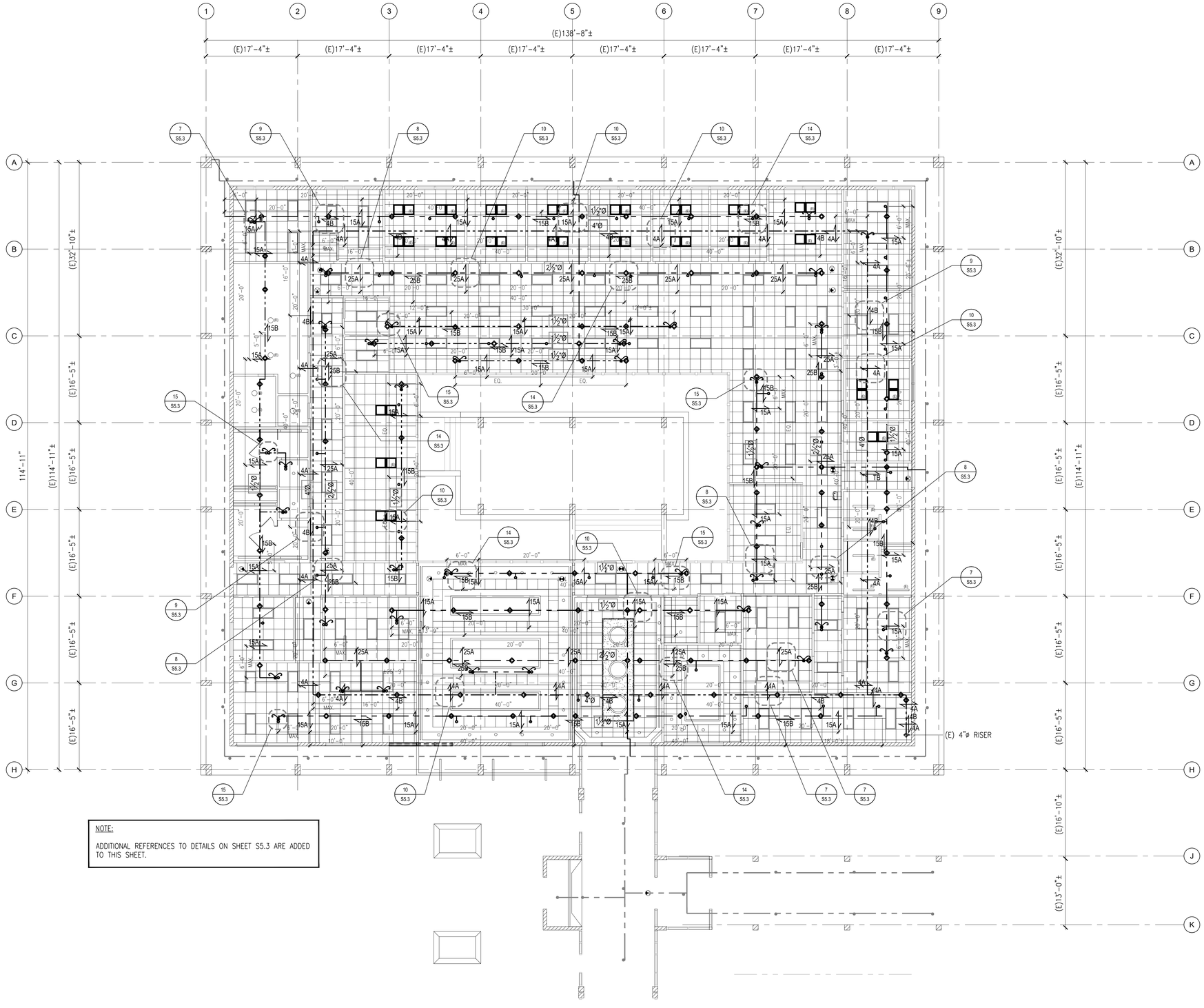
SHEET NUMBER

S1.1

SHEET NO. OF

NOTES:
1. THESE DRAWINGS ARE SOLELY TO IMPROVE THE SEISMIC BRACING OF THE EXISTING FIRE SPRINKLER SYSTEM IN THIS STRUCTURE TO MEET CURRENT NFPA STANDARD OF HIGH SEISMIC PERFORMANCE LEVEL.

2. THE FIRST TRANSVERSE BRACE LOCATED AT 6'-0" FROM THE START OF THE PIPE LINE CAN BE ADJUSTED TO LINE UP WITH THE EXISTING FRAMING TO A MAXIMUM DISTANCE OF 6'-0" FROM THE START OF THE PIPE LINE



NOTE:

ADDITIONAL REFERENCES TO DETAILS ON SHEET S5.3 ARE ADDED TO THIS SHEET.

LEGEND:

LINE	SIZE
4	4"ø
25	2½"ø
15	1½"ø

BRACE TYPE
A = LATERAL
B = LONGITUDINAL

LINE	MAXIMUM BRACE SPACING	MAXIMUM BRACE LOAD
4A	20'-0"	300 LBS
4B	40'-0"	569 LBS
25A	20'-0"	175 LBS
25B	40'-0"	230 LBS
15A	20'-0"	85 LBS
15B	40'-0"	145 LBS

INDICATES (E) PIPE HANGER

INDICATES (E) FIRE SPRINKLER HEAD

INDICATES (E) FIRE SPRINKLER PIPE SIZE

ø — INDICATES (E) FIRE SPRINKLER PIPE

INDICATES LINE SIZE

INDICATES BRACE TYPE

#X — INDICATES NEW BRACE LOCATION

INDICATES LINE RESTRAINT WITH SPLAY WIRE, SURGE RESTRAINER, RING HANGER, HANGER ROD AND BEAM CONNECTION ASSEMBLY. SEE DETAIL 15/S5.3.

N

EXISTING FIRE SPRINKLER PLAN | 1/8"=1'-0" | 1

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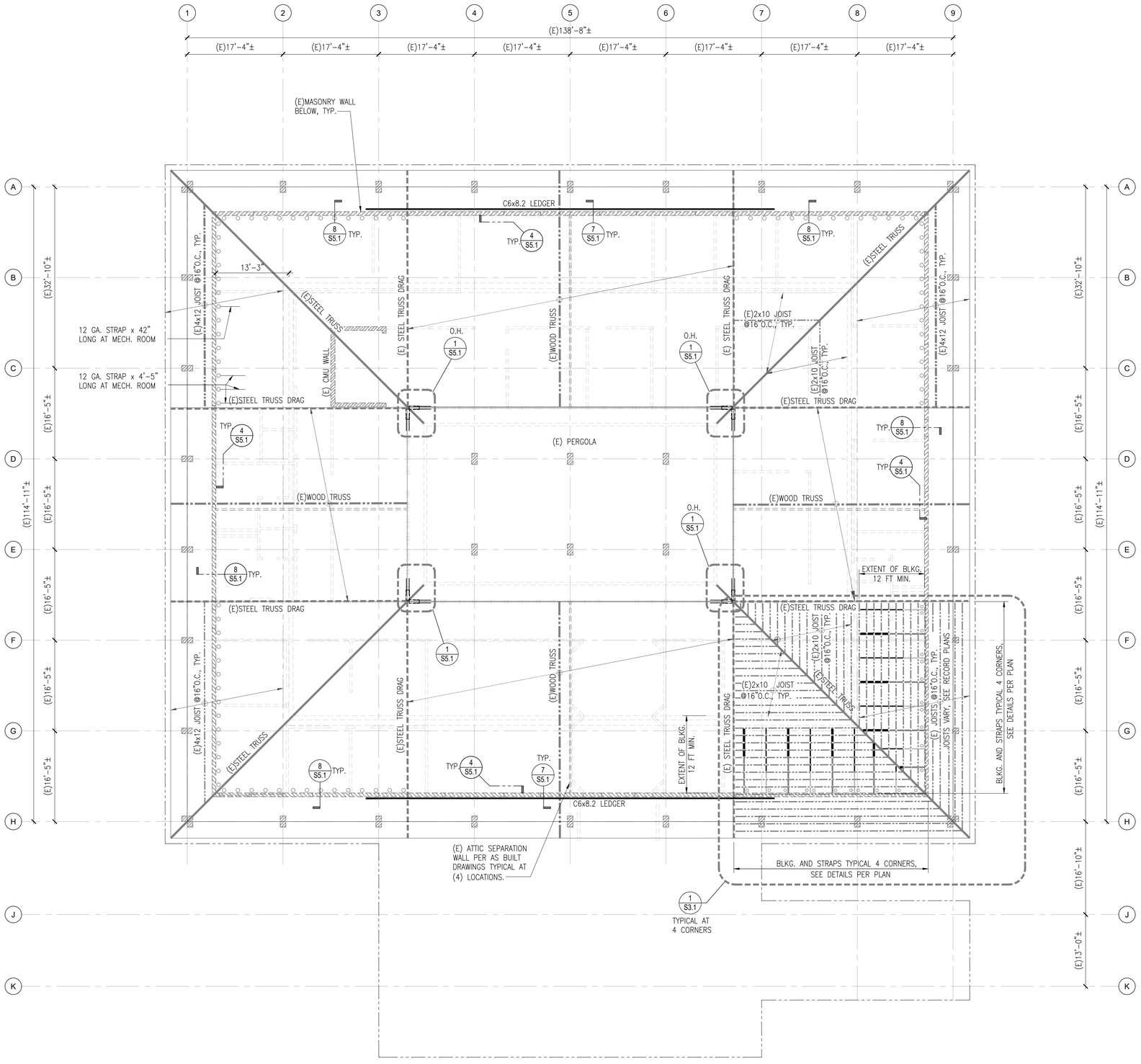
SHEET TITLE

EXISTING FIRE SPRINKLER PLAN

SHEET NUMBER

S2.2

SHEET NO. OF



NOTES:

1. GENERAL CONTRACTOR TO CONFIRM ROOF DIAPHRAGM NAILING PATTERN OF 6" AT BOUNDARIES, 6" AT PANEL EDGES AND 12" AT FIELD.
2. GENERAL CONTRACTOR TO CONFIRM ALL EXISTING STRUCTURAL ELEMENT AND IF SIZES OF EXISTING BOLTS AND ALL EXISTING MISCELLANEOUS STEEL IS NOT AS SHOWN ON THESE DRAWINGS, GENERAL CONTRACTOR TO CONTACT SEOR,
3. NEW AND EXISTING OUT OF PLANE BRACING TO OCCUR @ 4'-0" O.C. IF (E) BRACING IS MISSING OR DAMAGED THEN NEW OUT OF PLANE BRACING PER DETAIL 4/S5.1 SHOULD BE INSTALLED TO MEET 4'-0" SPACING.
4. SEE DETAIL 16/S5.1 FOR CHORD SPLICE.
5. SEE DETAIL 20/S5.1 WHERE TRENCH INFILL IS REQUIRED.
6. LOCATIONS OF STRAPS AND BLKG. TO BE VERIFIED BY CONTRACTOR.

LEGEND:

- IN-PLANE SHEAR TRANSFER PLATE PER 19/S5.1 IN-PLANE SHEAR TRANSFER PLATE MAY BE RELOCATED TO NEXT AVAILABLE LOCATION IN WALL LINE IF AS-BUILT CONDITION PRESENTS ANY CONFLICTS OR INTERFERENCES.

N

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DRAWN BY	
CHECKED BY	

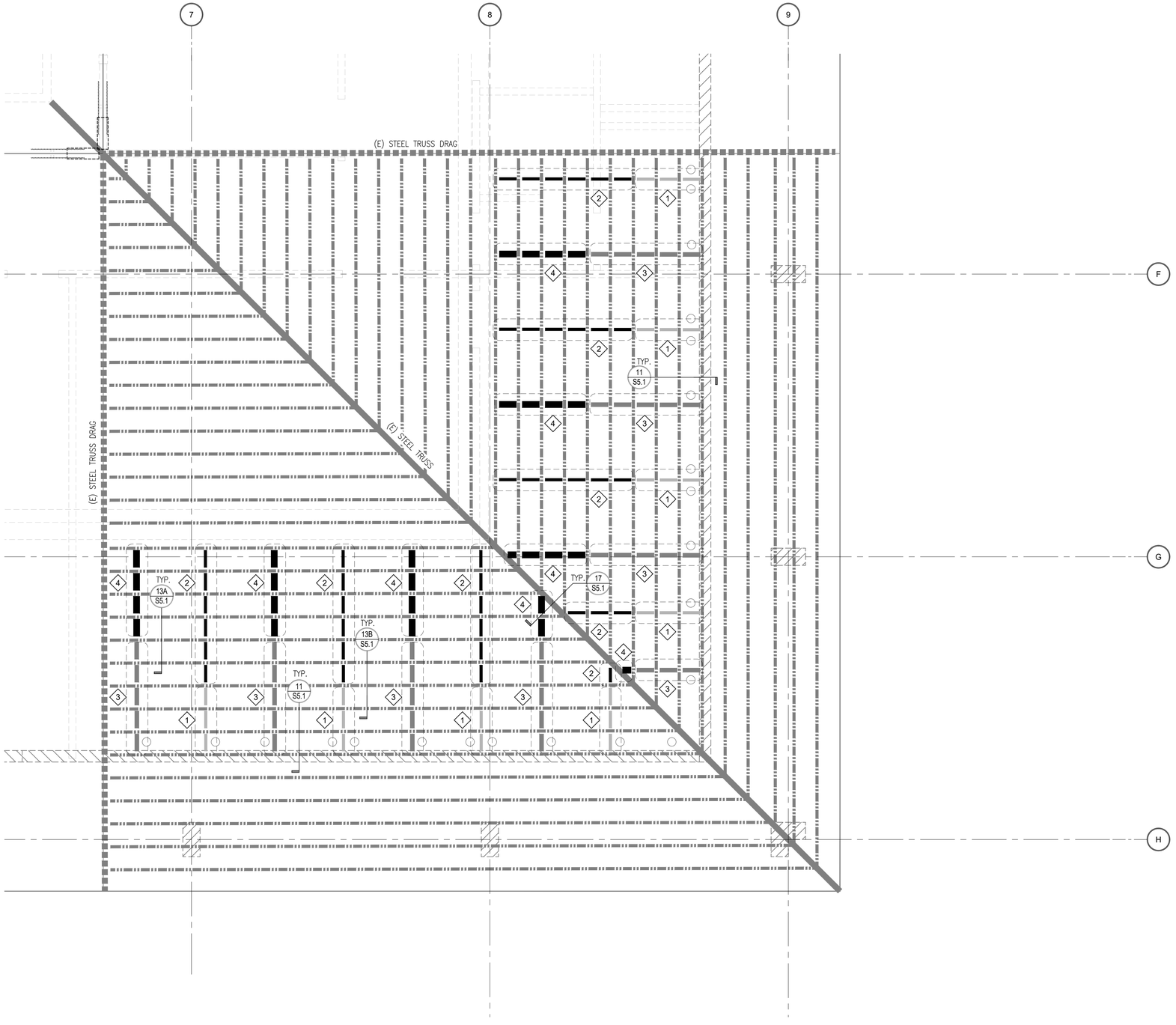
SHEET TITLE

ROOF FRAMING PLAN

SHEET NUMBER

S2.3

SHEET NO. OF



NOTE:

1. SEE SHEET S2.3 FOR ADDITIONAL INFOMATION.

LEGEND:

4x BLKG.

BLKG. PER 11/S5.1

2x BLKG.

EXISTING BLKG.

N

CORNER BLOCKING PLAN | 3/32" = 1'-0" | 1

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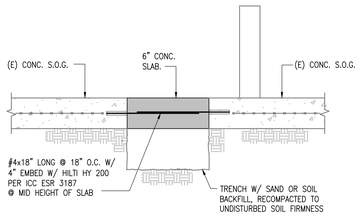
SHEET TITLE

CORNER BLOCKING PLAN

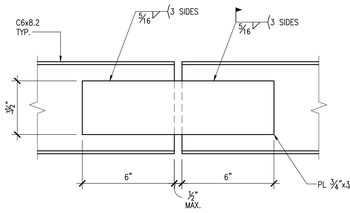
SHEET NUMBER

S3.1

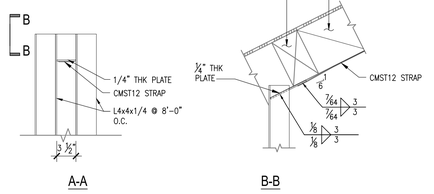
SHEET NO. OF

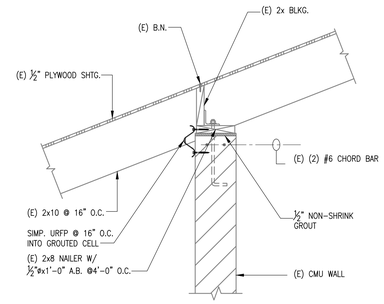


TYPICAL TRENCH DETAIL | 1"=1'-0" | 20

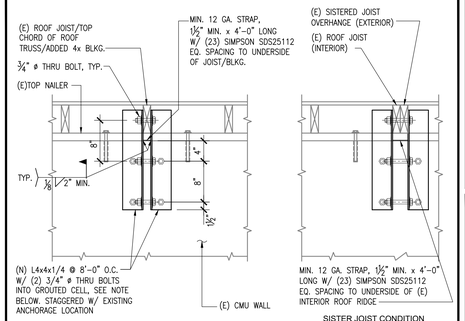


CHORD SPLICE DETAIL | 3"=1'-0" | 16

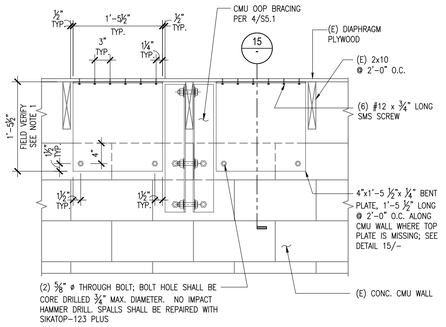




TYP. SHEAR TRANSFER DETAIL | 1"=1'-0" | 8

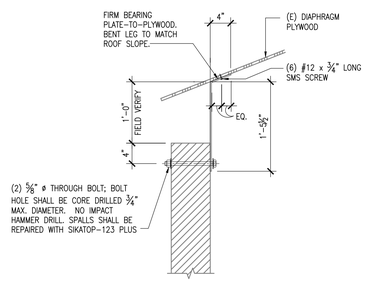


ADDITIONAL WALL ANCHOR DETAIL | 1"=1'-0" | 4



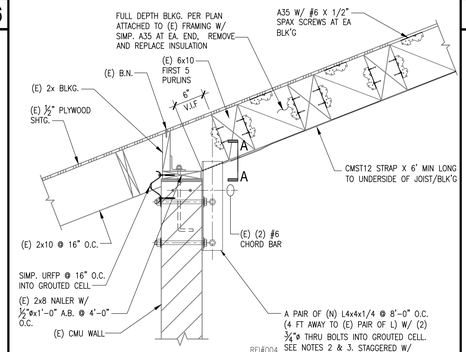
NOTE:
1. EACH SPACE BETWEEN ROOF FRAMING SHALL BE FIELD MEASURED PRIOR TO PLATE FABRICATION TO MAKE SURE OF PROPER FIT-UP AS INTENDED BY THIS DETAIL.

THROUGH-BOLT SHEAR TRANSFER DETAIL | 1"=1'-0" | 19



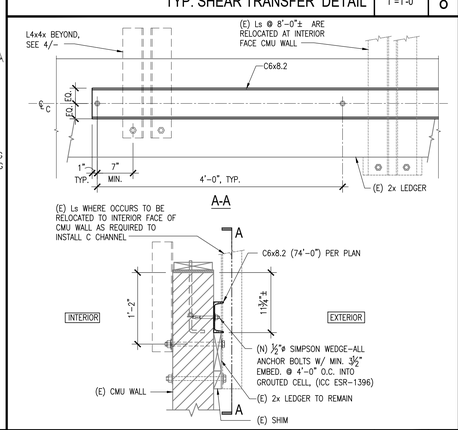
NOTE:
1. BENT PLATE CAN BE INSTALLED ON EITHER SIDE OF THE CMU WALL WHERE THE EXISTING SITE CONDITIONS ALLOW FOR IT TO FIT.

SECTION THROUGH WALL | 1"=1'-0" | 15

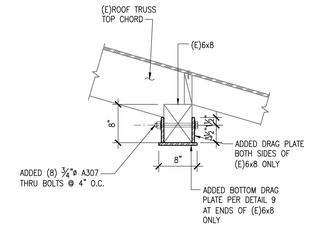


NOTE:
1. FOR ADDITIONAL INFORMATION, SEE 10/–.
2. (E) ANCHORAGE TO CMU WALL: A PAIR OF L3x3x3/16 @ 8'-0" O.C. W/ (2) ½"ø THRU BOLT (NOT SHOWN IN THIS DETAIL.)
3. REMOVE AND REPLACE (E) 2" THK RIGID INSULATION.

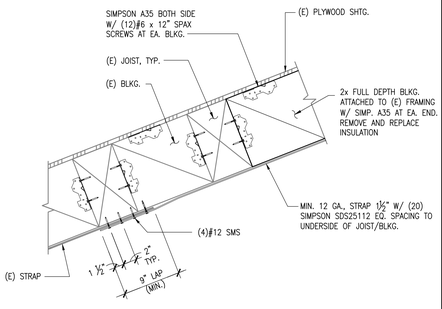
DETAIL | 1"=1'-0" | 11



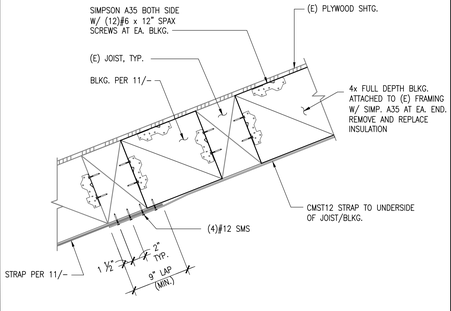
DETAIL | 1"=1'-0" | 7



REINFORCEMENT OF (E) 6x8 CHORD / DRAG MEMBER | 1"=1'-0" | 3

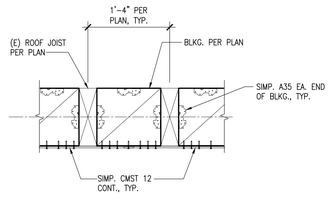


CASE B

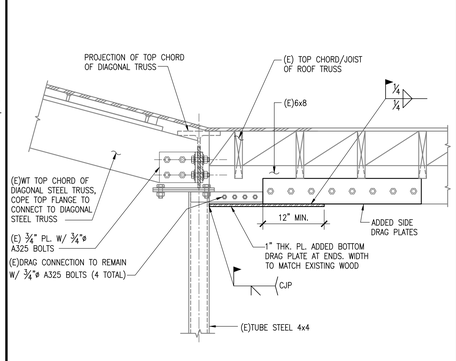


CASE A

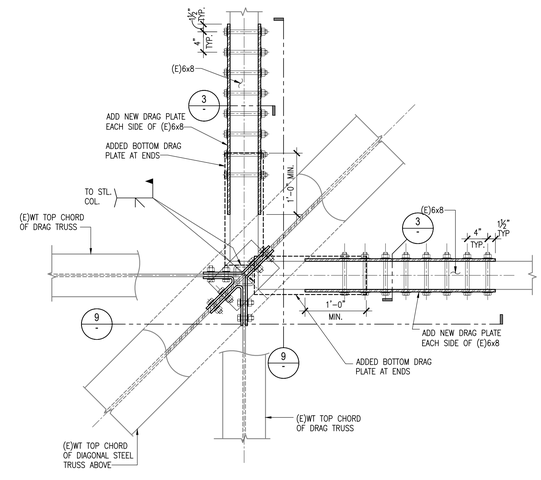
STRAP OVERLAP DETAIL | N.T.S. | 13



BLOCKING DETAIL | 1"=1'-0" | 10

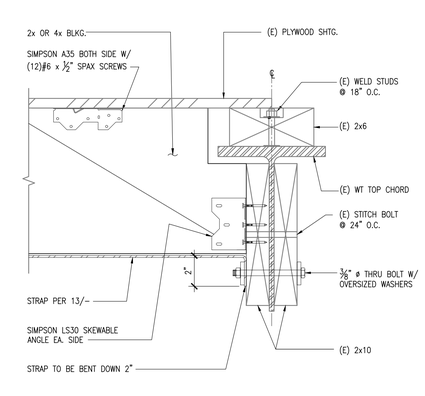


DIAGONAL CONN.TO DIAPHRAGM THRU (E) COLUMN | 1"=1'-0" | 9



PLAN

RETROFIT DETAIL AT ATRIUM CORNER | 1"=1'-0" | 1



BLKG. TO (E) WT TOP CHORD DETAIL | N.T.S. | 17

CLIENT
MWDOC
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PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT
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STAMP

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ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
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CHECKED BY	

SHEET TITLE

DETAILS AND SECTIONS

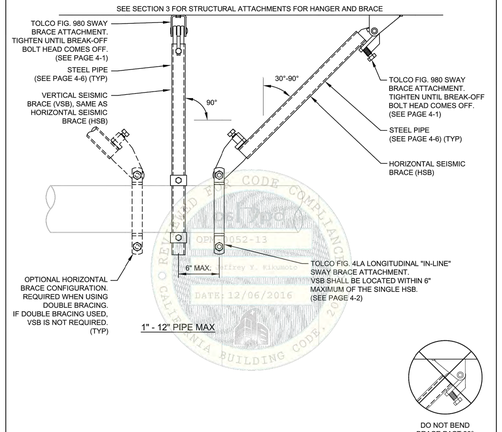
SHEET NUMBER

S5.1

SHEET NO. OF

LONGITUDINAL RIGID BRACE FOR SINGLE HUNG PIPE WITH LONGITUDINAL "IN-LINE" PIPE CLAMP

DETAIL 2LA



NOTES:
1.) DESIGN OF HANGER SUPPORTING GRAVITY LOADS ONLY NOT IN SCOPE OF THIS PRE-APPROVAL. DESIGN OF HANGER TO BE APPROVED ON PROJECT SPECIFIC BASIS BY OSHPD.
2.) SEE SECTION 3 AND SECTION 4 FOR ALLOWABLE LOADS FOR VARIOUS BRACE ANGLE CONFIGURATIONS.
3.) VSB AND HORIZONTAL SEISMIC BRACE MAY USE DIFFERENT APPROVED COMPONENTS.

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Structural Engineer: Mohammad Hariri
California SE No. S3545

PAGE: 10-2-5
DATE: NOVEMBER 29, 2016

ANY PAGE REFERENCES MADE WITHIN SECTION 10 ARE TO PAGES WITHIN SECTION 10 ONLY

DETAIL N.T.S. 8

NOTE:
1. SWAY BRACE IS BASED ON A SHORT PERIOD S_S=1.556g, HORIZONTAL LOAD FACTOR C_P=0.73.

DETAIL N.T.S. 7

TOLBrace™ Seismic Calculations

Project Address: MWDOC -SEISMIC RETROFIT
18700 WARD STREET
FOUNTAIN VALLEY CA 92608
Job #

IDS Group
1 Peters Canyon Rd., Ste. 13(
Irvine, CA 92606

Calculations based on 2016 NFPA Pamphlet #13

Brace Information

Maximum Spacing	20' 0" (6.1 m)
Maximum Brace Length	7' 0" (2.13 m)
Bracing Material	1" Sch.40
Angle from Vertical	45° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1310 lbs (594 kg)
Force Factor (Cp)	0.73

Fastener Information

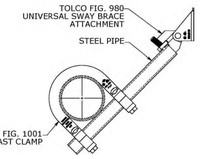
Fastener Orientation	NFPA Type E
Maximum Load	350 lbs (159 kg)
Diameter	1/2in.
Length	3-1/2in.
Type	Through-Bolt

TOLCO™ Brace Components

TOLCO™ Component Fig. Number	Adjusted Load
Fig. 1001 Clamp	1425 lbs (646 kg)
Fig.980 Universal Swivel	1425 lbs (646 kg)

*Calculation Based on CONCENTRIC Loading
*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

Assembly Detail



Brace Identification on Plans	4A
Orientation of Brace	Lateral

Size and Type of Pipe	Total Length	Total Calculated Load
4" Sch.40 Steel Pipe (101.6 mm)	20ft (6.1 m)	239 lbs (108 kg)
1.5" Sch.40 Steel Pipe (38.1 mm)	8ft (2.4 m)	21 lbs (10 kg)
Percentage added for Fittings and Sprinklers	15%	39 lbs (17.69 kg)
Total Adjusted Load of all pipe within Zone of Influence		300 lbs (136 kg)

DETAIL N.T.S. 6

NOTE:
1. SWAY BRACE IS BASED ON A SHORT PERIOD S_S=1.556g, HORIZONTAL LOAD FACTOR C_P=0.73.

DETAIL N.T.S. 5

TOLBrace™ Seismic Calculations

Project Address: MWDOC -SEISMIC RETROFIT
18700 WARD STREET
FOUNTAIN VALLEY CA 92608
Job #

IDS Group
1 Peters Canyon Rd., Ste. 13(
Irvine, CA 92606

Calculations based on 2016 NFPA Pamphlet #13

Brace Information

Maximum Spacing	40' 0" (12.19 m)
Maximum Brace Length	7' 0" (2.13 m)
Bracing Material	1" Sch.40
Angle from Vertical	45° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1310 lbs (594 kg)
Force Factor (Cp)	0.73

Fastener Information

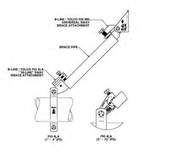
Fastener Orientation	NFPA Type E
Maximum Load	600 lbs (272 kg)
Diameter	1/2in. (13 mm)
Length	Minimum 4x Wood Member
Type	Dual Through-Bolts - Fig.906

TOLCO™ Brace Components

TOLCO™ Component Fig. Number	Adjusted Load
Fig. 4LA Clamp	707 lbs (321 kg)
Fig.980 Universal Swivel	1425 lbs (646 kg)

*Calculation Based on CONCENTRIC Loading
*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

Assembly Detail



Brace Identification on Plans	4B
Orientation of Brace	Longitudinal

Size and Type of Pipe	Total Length	Total Calculated Load
4" Sch.40 Steel Pipe (101.6 mm)	40ft (12.2 m)	479 lbs (217 kg)
1.5" Sch.40 Steel Pipe (38.1 mm)	6ft (1.8 m)	16 lbs (7 kg)
Percentage added for Fittings and Sprinklers	15%	74 lbs (33.57 kg)
Total Adjusted Load of all pipe within Zone of Influence		569 lbs (258 kg)

DETAIL N.T.S. 4

NOTE:
1. SWAY BRACE IS BASED ON A SHORT PERIOD S_S=1.556g, HORIZONTAL LOAD FACTOR C_P=0.73.

DETAIL N.T.S. 3

TOLBrace™ Seismic Calculations

Project Address: MWDOC -SEISMIC RETROFIT
18700 WARD STREET
FOUNTAIN VALLEY CA 92608
Job #

IDS Group
1 Peters Canyon Rd., Ste. 13(
Irvine, CA 92606

Calculations based on 2016 NFPA Pamphlet #13

Brace Information

Maximum Spacing	20' 0" (6.1 m)
Maximum Brace Length	7' 0" (2.13 m)
Bracing Material	1" Sch.40
Angle from Vertical	45° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1310 lbs (594 kg)
Force Factor (Cp)	0.73

Fastener Information

Fastener Orientation	NFPA Type E
Maximum Load	230 lbs (104 kg)
Diameter	1/2in.
Length	1-1/2in.
Type	Through-Bolt

TOLCO™ Brace Components

TOLCO™ Component Fig. Number	Adjusted Load
Fig. 1001 Clamp	1425 lbs (646 kg)
Fig.980 Universal Swivel	1425 lbs (646 kg)

*Calculation Based on CONCENTRIC Loading
*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

Assembly Detail

Brace Identification on Plans	4A
Orientation of Brace	Lateral

Size and Type of Pipe	Total Length	Total Calculated Load
4" Sch.40 Steel Pipe (101.6 mm)	20ft (6.1 m)	239 lbs (108 kg)
1.5" Sch.40 Steel Pipe (38.1 mm)	8ft (2.4 m)	21 lbs (10 kg)
Percentage added for Fittings and Sprinklers	15%	39 lbs (17.69 kg)
Total Adjusted Load of all pipe within Zone of Influence		300 lbs (136 kg)

DETAIL N.T.S. 5

NOTE:
1. SWAY BRACE IS BASED ON A SHORT PERIOD S_S=1.556g, HORIZONTAL LOAD FACTOR C_P=0.73.

DETAIL N.T.S. 3

TOLBrace™ Seismic Calculations

Project Address: MWDOC -SEISMIC RETROFIT
18700 WARD STREET
FOUNTAIN VALLEY CA 92608
Job #

IDS Group
1 Peters Canyon Rd., Ste. 13(
Irvine, CA 92606

Calculations based on 2016 NFPA Pamphlet #13

Brace Information

Maximum Spacing	20' 0" (6.1 m)
Maximum Brace Length	7' 0" (2.13 m)
Bracing Material	1" Sch.40
Angle from Vertical	45° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1310 lbs (594 kg)
Force Factor (Cp)	0.73

Fastener Information

Fastener Orientation	NFPA Type E
Maximum Load	230 lbs (104 kg)
Diameter	1/2in.
Length	1-1/2in.
Type	Through-Bolt

TOLCO™ Brace Components

TOLCO™ Component Fig. Number	Adjusted Load
Fig. 1001 Clamp	1425 lbs (646 kg)
Fig.980 Universal Swivel	1425 lbs (646 kg)

*Calculation Based on CONCENTRIC Loading
*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.

Assembly Detail

Brace Identification on Plans	4A
Orientation of Brace	Lateral

Size and Type of Pipe	Total Length	Total Calculated Load
4" Sch.40 Steel Pipe (101.6 mm)	20ft (6.1 m)	239 lbs (108 kg)
1.5" Sch.40 Steel Pipe (38.1 mm)	8ft (2.4 m)	21 lbs (10 kg)
Percentage added for Fittings and Sprinklers	15%	39 lbs (17.69 kg)
Total Adjusted Load of all pipe within Zone of Influence		300 lbs (136 kg)

DETAIL N.T.S. 1

NOTE:
1. SWAY BRACE IS BASED ON A SHORT PERIOD S_S=1.556g, HORIZONTAL LOAD FACTOR C_P=0.73.

DETAIL N.T.S. 1

CLIENT

MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

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1 PETERS CANYON ROAD, SUITE 130
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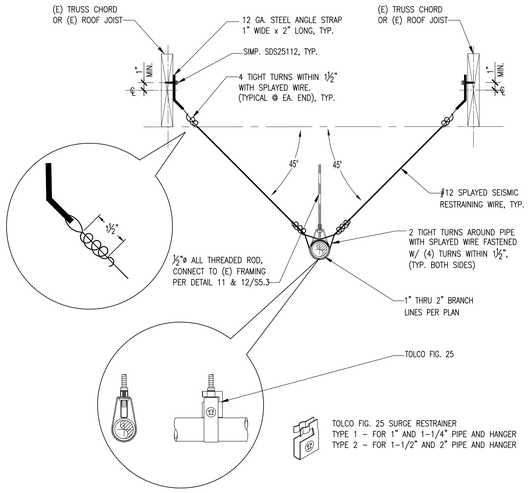
DETAILS AND SECTIONS

SHEET NUMBER

S5.2

SHEET NO. OF

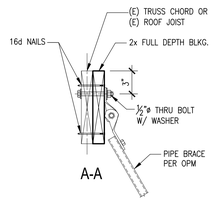


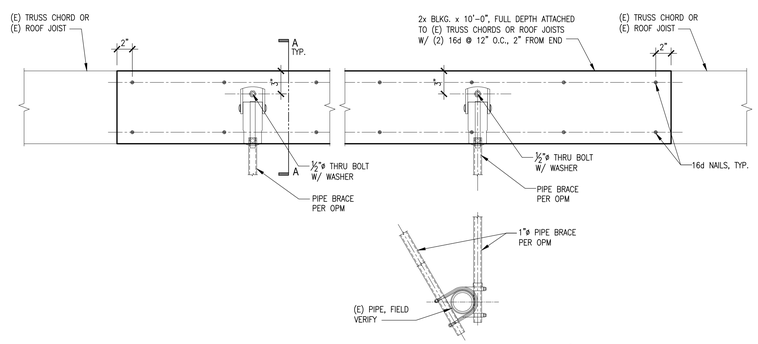
BRANCH LINE SEISMIC RESTRAINT (NFPA 13, 2016 SECTION 9.3.6.1)

PLAN SYMBOL =

NOTES:
1. PROVIDE END LINE RESTRAINTS AT ALL END OF BRANCHLINES WITHIN 2' OF HANGER AND AT 25'-0" INTERVALS MAXIMUM SPACING. WHERE THE UPWARD OR LATERAL MOVEMENT OF THE SYSTEM PIPING WOULD RESULT IN DAMAGE TO THE SPRINKLER THROUGH THE IMPACT AGAINST THE BUILDING STRUCTURE, EQUIPMENT OR FINISH MATERIALS.
2. NOT REQUIRED WHERE HANGER RODS ARE LESS THAN 6 INCHES PER NFPA 13, 2016 9.3.6.5.
3. THE END SPRINKLER ON A BRANCH LINE SHALL BE RESTRAINED AGAINST EXCESSIVE VERTICAL OR LATERAL MOVEMENT (NFPA 13, 2016 SECTION 9.3.6.3)

BRANCH LINE RESTRAINT DETAIL | 1 1/2"=1'-0" | 15

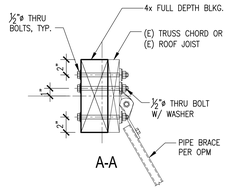


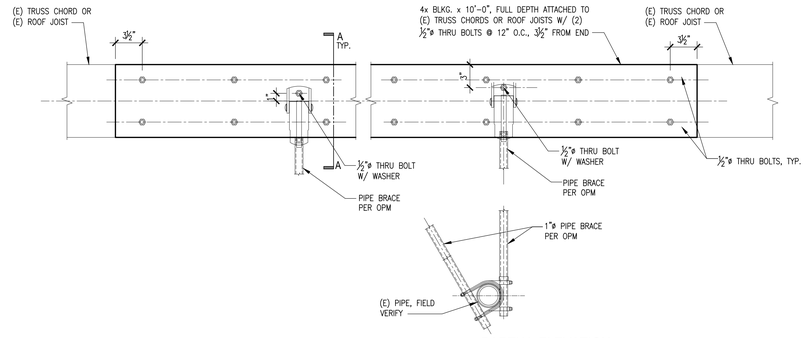


NOTE:
SEE DETAIL 7/S5.2 FOR ADDITIONAL BRACE INFORMATION.

PARTIAL ELEVATION

TRANSVERSE BRACING | 1 1/2"=1'-0" | 8





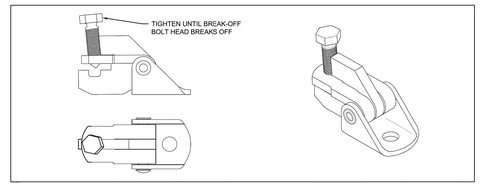
NOTE:
SEE DETAIL 7/S5.2 FOR ADDITIONAL BRACE INFORMATION.

PARTIAL ELEVATION

4"Ø PIPES

TRANSVERSE BRACING | 1 1/2"=1'-0" | 7

TOLCO FIG. 980 UNIVERSAL SWIVEL SWAY BRACE ATTACHMENT



ALLOWABLE CAPACITY (lbf) per INSTALLATION ANGLE FROM VERTICAL, ϕ (N)				
30°-44°	45°-59°	60°-74°	75°-90°	REMARKS
1320 (5870)	1970 (8760)	2310 (10270)	2550 (11340)	a

a. FM APPROVED WHEN USED WITH 1, 1-1/4, 1-1/2, OR 2 INCH SCHEDULE 40 STEEL PIPE AS THE BRACE MEMBER.

NOTES:
1.) BRACE MUST BE SCH. 40 STEEL PIPE.
2.) DESIGN OF HANGER SUPPORTING GRAVITY LOADS ONLY NOT IN SCOPE OF THIS PRE-APPROVAL. DESIGN OF HANGER TO BE APPROVED ON PROJECT SPECIFIC BASIS BY OSHPD.

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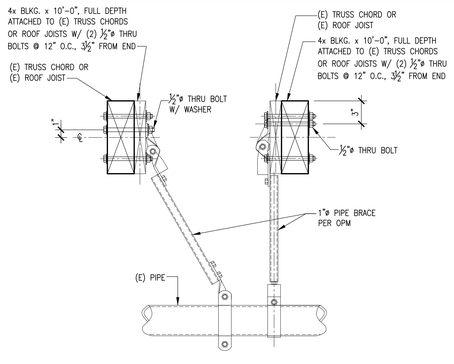
Structural Engineer: Mohammad Hariri
California SE No. S3545

PAGE: 10-4-1
DATE: NOVEMBER 29, 2016

ANY PAGE REFERENCES MADE WITHIN SECTION 10 ARE TO PAGES WITHIN SECTION 10 ONLY

NOTE:
1. SWAY BRACE IS BASED ON A SHORT PERIOD S_S=1.556g, HORIZONTAL LOAD FACTOR C_P=0.73.

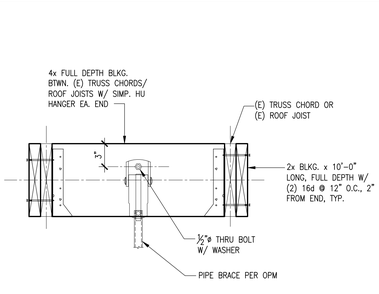
DETAIL | N.T.S. | 3



NOTE:
SEE DETAIL 8/S5.2 FOR ADDITIONAL BRACE INFORMATION.

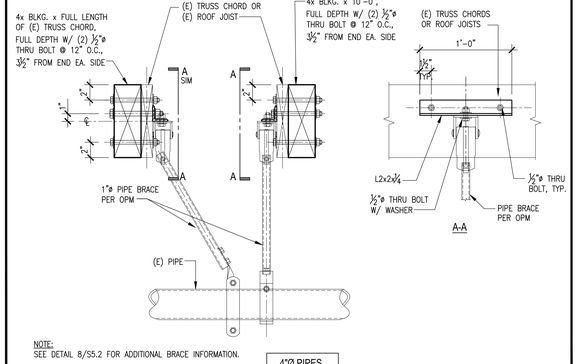
1½"Ø AND 2½"Ø

LONGITUDINAL BRACING | 1 1/2"=1'-0" | 14



1½"Ø, 2½"Ø AND 4"Ø PIPES (APPLICABLE TO BOTH LATERAL AND VERTICAL PIPE BRACES)

TRANSVERSE BRACING NOT ALIGNED WITH (E) FRAMING | 1 1/2"=1'-0" | 10



NOTE:
SEE DETAIL 8/S5.2 FOR ADDITIONAL BRACE INFORMATION.

4"Ø PIPES

LONGITUDINAL BRACING | 1 1/2"=1'-0" | 9

TOLCO FIG. 4L OR 4LA "IN-LINE" PIPE CLAMP SWAY BRACE

FIG. 4L - LONGITUDINAL ORIENTATION

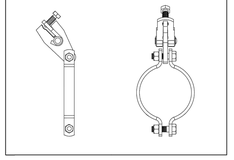


FIG. 4LA - LONGITUDINAL ORIENTATION

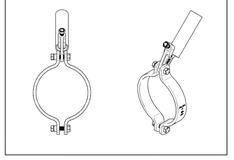
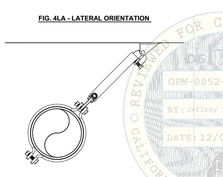


FIG. 4LA - LATERAL ORIENTATION



NOTES:
1.) TIGHTEN BOLTS TO FOLLOWING TORQUE VALUES:

1/4"	6 FT-LBS
5/16"	11 FT-LBS
3/8"	20 FT-LBS
1/2"	49 FT-LBS
5/8"	97 FT-LBS
3/4"	173 FT-LBS
1"	250 FT-LBS

2.) REFERENCE PAGE 4-2a FOR ALLOWABLE LONGITUDINAL AND LATERAL LOADS, AND PIPE DIAMETERS PERMITTED.

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California SE No. S3545

PAGE: 10-4-2
DATE: NOVEMBER 29, 2016

ANY PAGE REFERENCES MADE WITHIN SECTION 10 ARE TO PAGES WITHIN SECTION 10 ONLY

DETAIL | N.T.S. | 5

TOLCO FIG. 4L OR 4LA "IN-LINE" PIPE CLAMP SWAY BRACE (LOADS) (ASD)

MODEL	PART DESCRIPTION	ORIENTATION	RUN PIPE NOMINAL SIZE, IN.	PIPE RUN REFERENCE	COMPONENT ALLOWABLE HORIZONTAL LOAD (LBS) BRACE ANGLE MEASURED FROM HORIZONTAL 45°-60°	31°-45°	0°-30°	REMARKS
4L	LONGITUDINAL IN-LINE ATTACHMENT	LONGITUDINAL	2 1/2	SCHD 10, SCHD 40	1030	1180	1420	b
4L	LONGITUDINAL IN-LINE ATTACHMENT	LONGITUDINAL	3, 4	SCHD 10, SCHD 40	530	730	890	b
4L	LONGITUDINAL IN-LINE ATTACHMENT	LONGITUDINAL	5, 6, 8	0.188, SCHD 40	490	680	830	b, c

REMARKS:
a.) NOT USED
b.) LOAD RATING FOR SCH. 10 ABOVE MAY BE APPLIED TO SCH. 40 STEEL PIPES.
c.) LOAD RATING FOR 0.188 ABOVE REFERS TO 0.188 INCH WALL THICKNESS PIPE AND CAN BE APPLIED TO ANY THICKER WALL.

MODEL	RUN PIPE NOMINAL SIZE, IN.	RUN PIPE REFERENCE	LONGITUDINAL COMPONENT ALLOWABLE LOAD (LBS) BRACE ANGLE MEASURED FROM HORIZONTAL 45°-60°	31°-45°	0°-30°	LATERAL COMPONENT ALLOWABLE LOAD (LBS) BRACE ANGLE MEASURED FROM HORIZONTAL 45°-60°	31°-45°	0°-30°	REMARKS
4LA	1 1/4	LW, 10, 40	680	970	1190	680	970	1190	a, b, c
4LA	1 1/2	LW, 10, 40	680	970	1190	680	970	1190	a, b, c
4LA	2	LW, 10, 40	600	860	1030	680	860	1030	a, b, c
4LA	2 1/2	LW, 10, 40	680	970	1190	680	970	1190	a, b, c
4LA	3	LW, 10, 40	680	970	1190	680	970	1190	a, b, c
4LA	3 1/2	LW, 10, 40	680	970	1190	680	970	1190	a, b, c
4LA	4	LW, 10, 40	680	970	1190	680	970	1190	a, b, c
4LA	6	LW, 10, 40	1620	2260	2010	1620	2300	2820	a, b, c
4LA	8	.188, 40	1620	1660	1570	1620	2300	2820	a, b, d
4LA	10	40	1620	1660	1570	1620	2300	2820	a
4LA	12	40	1620	1660	1570	1620	2300	2820	a

REMARKS:
a.) FM APPROVED WHEN USED WITH 1", 1 1/4", 1 1/2" OR 2" SCH. 40 STEEL PIPE AS THE BRACE MEMBER.
b.) LOAD RATING FOR LW ABOVE REFERS TO FM APPROVED LIGHTWALL PIPE, COMMONLY REFERRED TO AS "SCHEDULE 7".
c.) LOAD RATING FOR SCHEDULE 10 ABOVE MAY BE APPLIED TO FM APPROVED THINWALL PIPE AND SCHEDULE 40 STEEL PIPES.
d.) LOAD RATING FOR 0.188 ABOVE REFERS TO 0.188 INCH WALL THICKNESS PIPE AND CAN BE APPLIED TO ANY THICKER WALL.

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PAGE: 12-6A
DATE: NOVEMBER 29, 2016

NOTE:
1. SWAY BRACE IS BASED ON A SHORT PERIOD S_S=1.556g, HORIZONTAL LOAD FACTOR C_P=0.73.

DETAIL | N.T.S. | 1

CLIENT

MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

STAMP

ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

SHEET TITLE

DETAILS AND SECTIONS

SHEET NUMBER

S5.3

SHEET NO. OF

SPECIFICATIONS

PART I - GENERAL

SCOPE:

A. PROVIDE LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY OR REQUIRED FOR THE COMPLETION, TESTING, INSPECTION AND ADJUSTING, TO PROVIDE OPERABLE MECHANICAL SYSTEMS COMPLETE IN ALL RESPECTS.

B. INVESTIGATION OF CONDITIONS:
EXAMINE THE CONTRACT DRAWINGS AND ALL AVAILABLE INFORMATION CONCERNING EXISTING INSTALLATION, STRUCTURE, AND LOCAL CONDITIONS. VISIT THE SITE TO UNDERSTAND THE NATURE AND SCOPE OF ALL WORK TO BE PERFORMED. THE SUBMISSION OF A BID WILL BE TAKEN AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND ALL CONDITIONS HAVE BEEN CONSIDERED.

C. DRAWINGS AND SPECIFICATIONS:
EXAMINE AND BECOME FAMILIAR WITH ALL PROJECT DRAWINGS AND SPECIFICATIONS; AND COORDINATE THE MECHANICAL WORK ACCORDINGLY. MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AND INSTALLATION AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR PROPER EXECUTION OF THE WORK, WITHOUT ADDITIONAL COST.

D. INSTALLATION:
THE ENTIRE MECHANICAL INSTALLATION SHALL BE MADE IN A NEAT, WORKMANSHIP-LIKE, FINISHED AND SAFE MANNER. CONCEAL ALL PIPING IN FINISHED AREAS, UNLESS OTHERWISE NOTED. ALL MATERIALS AND INSTALLATIONS SHALL CONFORM TO THE LATEST PUBLISHED ASHRAE, SMACNA, NFPA, NEMA, AND NEC CODES. THE ENTIRE INSTALLATION SHALL BE SUBJECT TO THE ARCHITECT'S APPROVAL.

E. CODES, PERMITS AND FEES:
THE DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT THAN CODES, ORDINANCES, STANDARDS AND STATUTES. CODES, ORDINANCES, STANDARDS AND STATUTES TAKE PRECEDENCE WHERE THEY ARE MORE STRINGENT THAN THE DRAWINGS AND SPECIFICATIONS. SECURE AND PAY FOR PERMITS, TESTS, CERTIFICATES OF INSPECTION, AND ALL OTHER COSTS INCIDENTAL TO THE WORK.

F. GUARANTEES:
ALL WORK SHALL BE GUARANTEED TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE WORK. REPLACE OR REPAIR DEFECTIVE MATERIALS OR REPAIR DEFECTIVE WORK AT NO ADDITIONAL COST.

G. THIS CONTRACTOR SHALL SUBMIT FOR APPROVAL EIGHT (8) SETS OF SHOP DRAWINGS ON THE FOLLOWING: VAV UNITS, DIFFUSERS, REGISTERS AND GRILLES, INSULATION (DUCT AND PIPE), FLEXIBLE DUCT, AND THERMOSTATS. AND ANY OTHER ITEMS REQUESTED BY THE ARCHITECT.

PART II - PRODUCTS

A. AIR DISTRIBUTION MATERIALS AND EQUIPMENT
1. ALL EQUIPMENT SHALL BE LABELED OR LISTED BY A RECOGNIZED APPROVAL AGENCY.
2. LOW PRESSURE DUCT WORK: SHALL BE G90 COATED GALVANIZED STEEL. DUCT CONSTRUCTION SHALL BE IN ACCORDANCE WITH SMACNA CONSTRUCTION STANDARDS FOR LOW VELOCITY DUCT. TAPS SHALL BE THE 45° BRANCH ENTRY TYPE (NO SPIN-INS) WITH NORMAL BALANCE DAMPERS, WHERE SHOWN ON THE DRAWINGS. DUCT SHALL BE CLASS 1.
3. ALL EXHAUST DUCTWORK EXTENDING INTO OR THROUGH THE RETURN AIR PLENUM SHALL BE SEALED AIR TIGHT AT ALL JOINTS AND CONNECTIONS USING A LISTED LOW TO MEDIUM PRESSURE DUCT SEALANT. SEALANT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS
4. EQUIPMENT CONCEALED ABOVE CEILINGS SHALL BE MARKED WITH COLORED ADHESIVE DOTS APPLIED TO THE CEILING GRID USING DEFINING COLORS AS NOTED BELOW:
   a. SHUT OFF VALVES — RED
   b. HUMIDIFIERS — GREEN
   c. AIR TERMINAL DEVICES — BLUE
   d. SMOKE DETECTORS — YELW
5. MANUAL VOLUME DAMPERS IN THE CEILING SPACE SHALL BE IDENTIFIED WITH A RED SURVEY RIBBON ATTACHED TO THE HANDLE.
6. DUCT INSULATION: ALL SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED AS FOLLOWS: R-8 MIN. DUCT INSULATION (PROVIDE 2", 1-1/2 #) ON SUPPLY AND EXHAUST DUCTS. ALL JOINTS SEALED TO MEET UL 181A OR 181B TAPES AND MASTICS. INSTALLATION PER MANUFACTURER'S INSTRUCTIONS.
7. FLEXIBLE DUCT: SHALL BE THERMAFLEX II TYPE MK-E OR EQUIVALENT, FOR LOW PRESSURE, FACTORY FABRICATED MATERIAL, WITH SPIRAL WIRE SUPPORT, MYLAR SHEATH, 1-1/2" THICK, 3/4 LB DENSITY BLANKET INSULATION AND VINYL JACKET. DUCT TO BE U.L. 181 LISTED, CLASS 1, AND IN COMPLIANCE WITH NFPA 90-A. INSTALL W/ MINIMUM NO. OF BENDS W/ A MIN. RADIUS OF 1-1/2 TIMES THE DUCT DIAMETER MEASURED FROM THE CENTERLINE. EXTEND STRAIGHT WHERE POSSIBLE AND LIMIT LENGTHS TO 5'-0" MAX.
8. GRILLES REGISTERS AND DIFFUSERS: PER BUILDING STANDARD OR AS SCHEDULED. ACCEPTABLE ALTERNATE MANUFACTURERS ARE KRUEGAR, CARNES, METAL-AIRE, AND PRICE.

PART III - EXECUTION

A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES TO INSTALL A COMPLETE, OPERATING AND APPROVED MECHANICAL SYSTEM INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. COORDINATION OF MECHANICAL SYSTEMS INSTALLATION WITH ALL OTHER CONTRACT TRADES ON SITE FOR OPENINGS, CLEARANCES, SPACE, ACCESS TO EQUIPMENT, ETC.
2. BALANCING AND ADJUSTING: SYSTEM START-UP, BALANCING TESTING AND ADJUSTING OF THE AFFECTED PORTIONS OF THE MECHANICAL SYSTEM SHALL BE THE RESPONSIBILITY OF AN INDEPENDENT THIRD PARTY APPROVED TESTING AND BALANCING CONTRACTOR. TESTING AND BALANCING CONTRACTOR SHALL BE AN AABC OR NEBB MEMBER. A COMPLETE BALANCING TEST REPORT SHALL BE SUBMITTED TO THE BUILDING OWNER/ENGINEER. THE AIR SYSTEMS SHALL BE BALANCED TO WITHIN PLUS OR MINUS 2% OF THE QUANTITIES LISTED. AT 2" W.C., AND SHALL HAVE DUCT LEAKAGE NO GREATER THAN 1%. THE COST OF THE INDEPENDENT TESTING AND BALANCING CONTRACTOR SHALL BE INCLUDED IN THE MECHANICAL CONTRACTOR BID.
3. CONTRACTOR SHALL BLOCK OFF ALL EXISTING SYSTEM DUCTWORK TO PREVENT CONSTRUCTION DUST AND DEBRIS FROM BEING RE-CIRCULATED IN THE EXISTING SYSTEM AND PREVENT DAMAGE TO THE AIR HANDLERS. CONTRACTOR MUST EITHER COMPLETELY BLOCK OFF DUCTWORK UNTIL FINAL CONNECTIONS ARE COMPLETED OR USE THROW AWAY CONSTRUCTION FILTERS ON THE DUCTWORK. CONTRACTOR SHALL ONLY USE THE BUILDING SYSTEM AT SUCH TIME THAT DUST AND DEBRIS ARE NOT PRESENT AND FOR THE PURPOSE OF TESTING AND BALANCING THE NEW TENANT SYSTEM. AFTER SYSTEM IS TESTED AND BALANCED CONTRACTOR SHALL PROVIDE AND INSTALL NEW CLEAN FILTERS IN THE AFFECTED ROOFTOP UNITS.
4. ACCURATE "AS-BUILT" DRAWINGS SHALL BE MAINTAINED DURING THE CONSTRUCTION
5. VERIFY WHO IS RESPONSIBLE FOR PERMITS AND ASSOCIATED (TYPICAL FOR MEP TRADES)
6. CONTRACTOR SHALL MAINTAIN XXX(QUANTITY) OF PRINTS OF DRAWINGS AT WORK SITE.
7. ROUTE PIPE AND DUCT SYSTEMS PARALLEL AND PERPENDICULAR TO THE BUILDING LINES. MOUNT AS CLOSE AS POSSIBLE TO UNDERSIDE OF THE BUILDING STRUCTURE.
8. IF A CONFLICT OCCURS BETWEEN THE CONTRACT DRAWINGS AND THE SPECIFICATIONS, INDICATE THAT THE SPECIFICATIONS OR MORE STRINGENT CONDITION SHALL GOVERN, UNLESS INSTRUCTED OTHERWISE.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND PATCHING OF DAMAGED ARCHITECTURAL COMPONENTS TO REMAIN DURING THE REMOVAL OF DESIGNATED SYSTEMS.
10. PROVIDE OWNER WITH FIVE (5) COPIES OF THE MAINTENANCE AND OPERATION MANUALS, AND MANUFACTURES/SUPPLIERS ONE YEAR PARTS AND LABOR WARRANTY FOR ALL INSTALLED EQUIPMENT.

ABBREVIATIONS

ABBR. / SYMBOL	DESCRIPTION	ABBR. / SYMBOL	DESCRIPTION	ABBR. / SYMBOL	DESCRIPTION
AD	ACCESS DOOR	EXH.	EXHAUST	OSA	OUTSIDE AIR
AFF	ABOVE FINISHED FLOOR	FM	FLOW METER	PD	PRESSURE DROP
AI	ANALOG INPUT	ENT	ENTERING	POC	POINT OF CONNECTION
AO	ANALOG OUTPUT	ESP	EXTERNAL STATIC PRESSURE	POD	POINT OF DEMOLITION
AP	ACCESS PANEL	°F	DEGREES FAHRENHEIT	RA	RETURN AIR
ARCH	ARCHITECTURAL	FC	FLEXIBLE CONNECTION	RAD	RETURN AIR DAMPER
BAS	BUILDING AUTOMATION SYSTEM	FD	FIRE DAMPER	RAT	RETURN AIR TEMP.
BDD	BACK DRAFT DAMPER	FLA	FULL LOAD AMPS	RG	RETURN GRILLE
BHP	BRAKE HORSEPOWER	FPM	FEET PER MINUTE	RH	RELATIVE HUMIDITY
BTUH	BTU PER HOUR	GPM	GALLONS PER MINUTE	RPM	REVOLUTIONS PER MINUTE
CC	COOLING COIL	H	HEIGHT	SA	SUPPLY AIR
CD	CEILING DIFFUSER	HP	HORSEPOWER	SAT	SUPPLY AIR TEMPERATURE
CFM	CUBIC FEET PER MINUTE	HWS/R	HEATING HOT WATER SUPPLY AND RETURN	SD	SMOKE DETECTOR
CWS/R	COOLING WATER SUPPLY AND RETURN	HZ	HERTZ	SF	SUPPLY FAN
CTWS/R	COOLING TOWER WATER SUPPLY AND RETURN	IN	INCHES	SG	SUPPLY GRILLE
CG	CEILING GRILLE	KW	KILOWATT	SP	STATIC PRESSURE
CNTRL	CONTROL	(L)	LINED DUCTWORK	SPEC	SPECIFICATION
CONN	CONNECTION	LB	POUND, WEIGHT	SQ FT	SQUARE FOOT
CONT	CONTINUATION	LAT	LEAVING AIR TEMPERATURE	S/S	START/ STOP
CR	CEILING REGISTER	LWT	LEAVING WATER TEMPERATURE	ST	SOUND TRAP
CSF	COMBINATION FIRE/SMOKE DAMPER	LVG	LEAVING	SZVAV	SINGLE ZONE VARIABLE AIR VOLUME
DDC		LWB	LEAVING WB TEMPERATURE	TS	TEMPERATURE SENSOR
DI	DIGITAL INPUT	MAX	MAXIMUM	TT	TEMPERATURE TRANSMITTER
DO	DIGITAL OUTPUT	MCC	MOTOR CONTROL CENTER	TSP	TOTAL STATIC PRESSURE
Ø	(DIA) DIAMETER	MIN	MINIMUM	TDH	TOTAL DYNAMIC HEAD
D	CONDENSATE DRAIN, DRAIN	NAI	NETWORK ANALOG INPUT	T OR TEMP	TEMPERATURE
dP	PRESSURE DROP	NAO	NETWORK ANALOG OUTPUT	TYP	TYPICAL
EA	EXHAUST AIR	NDI	NETWORK DIGITAL INPUT	VD	VOLUME DAMPER
EAD	EXHAUST AIR DAMPER	NDO	NETWORK DIGITAL OUTPUT	VAV	VARIABLE AIR VOLUME
EAT	ENTERING AIR TEMPERATURE	NC	NORMALLY CLOSED	VFD	VARIABLE FREQUENCY DRIVE
EWT	ENTERING WATER TEMPERATURE	NO	NORMALLY OPEN	WB	WET BULB
EDB	ENTERING DB TEMPERATURE	SS	STAINLESS STEEL		
EWB	ENTERING WB TEMPERATURE	NO.	NUMBER		
EMS	ENERGY MANAGEMENT SYSTEM	OAD	OUTSIDE AIR DAMPER		
EF	EXHAUST FAN	OPER WT	OPERATING WEIGHT		
		OPNG	OPENING		

MECHANICAL LEGEND

ABBR. / SYMBOL	DESCRIPTION	ABBR. / SYMBOL	DESCRIPTION
	SQUARE OR RECTANGULAR DUCT	XX / XX	EQUIPMENT DESIGNATION & NUMBER
	ROUND DUCT	1	NOTE DESIGNATION
FD	FIRE DAMPER	P.O.C.	POINT OF CONNECTION
CSFD	COMBINATION FIRE/SMOKE DAMPER	P.O.D.	POINT OF DISCONNECT
	DUCT WITH MANUAL VOLUME DAMPER	U/C	UNDERCUT DOOR
VD	VOLUME DAMPER	D/L	DOOR LOUVER
(L-X\)	DUCT WITH ACOUSTICAL LINER-SIZES GIVEN ARE SHEET METAL OUTSIDE DIMENSIONS. (X) IS LINER THICKNESS IN INCHES. IF X IS NOT SHOWN, REFER TO NOTES.	CHWS	CHILLED WATER SUPPLY
		CHWR	CHILLED WATER RETURN
		HWS	HOT WATER SUPPLY
R OR D	INCLINE RISE OR DROP IN DIRECTION OF AIR FLOW	HWR	HOT WATER RETURN
	FLEXIBLE DUCT - DOUBLE LINE	T	ROOM THERMOSTAT
	FLEXIBLE DUCT - SINGLE LINE	SD	SMOKE DETECTOR
	DIRECTION OF FLOW	H	ROOM HUMIDISTAT
	TRANSITION	OS	OCCUPANCY SENSOR
	VAV (VAV-NO.)	LS	LIGHTING CONTROL SWITCH
	SIDEWALL REGISTER	LC	LIGHTING CONTROLLER
	SUPPLY, RETURN, EXHAUST UP	TC	TIME DELAY
	SUPPLY, RETURN, EXHAUST DOWN	DS	DAYLIGHT SENSOR
	CEILING REGISTER	DM	DIMMER
	EXHAUST REGISTER	LR	LIGHTING CONTROL RELAY
	CEILING DIFFUSER	CO	CARBON MONOXIDE SENSOR
	ROUND DUCT UP AND DOWN	CO_2	CARBON DIOXIDE SENSOR
	CEILING ACCESS PANEL	TS	TEMPERATURE SENSOR
	DUCT WITH TURNING VANES	PS x	POWER SUPPLY. "X" IS VOLTAGE

BID INSTRUCTIONS

1. BEFORE SUBMITTING BIDS MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COMPARE THE CONSTRUCTION DOCUMENTS SET WITH EXISTING AS BUILT PLANS TO VERIFY EXACT SCOPE OF WORK AND BILL OF MATERIALS. NO ADDED CHANGE ORDERS WILL BE GRANTED TO CONTRACTOR FOR MISSING ANY PART OF THE SCOPE OF WORK PRESENTED ON THE CONSTRUCTION DOCUMENTS SET.
2. MECHANICAL CONTRACTOR SHALL TEST THE WHOLE NEW HVAC SYSTEM AND PROVIDE ONE YEAR LABOR AND MATERIAL GUARANTEE FOR ONE YEAR AS A SEPARATE BID TO OWNER FOR APPROVAL.
3. REFLECTED CEILING PLAN IS 8'-5" FEET HIGH. CONTRACTOR SHALL COORDINATE INSTALLATIONS WITH ALL OTHER TRADES.

WARRANTY:
MECHANICAL CONTRACTOR SHALL WARRANTY THE HEATING, VENTILATION AND AIR-CONDITIONING SYSTEM FOR ONE (1) YEAR. THE WARRANTY SHALL BE IMPLEMENTED UPON CONSTRUCTION COMPLETION AND SHALL INCLUDE LABOR AND MATERIALS. NO ADDITIONAL COST WILL BE GRANTED TO CONTRACTOR RELATED TO BREAKDOWN OF THE HVAC SYSTEM OR REPLACING NON-OPERATIONAL MATERIAL/PARTS DURING THE WARRANTY PERIOD.

CODES AND STANDARDS

2016 CALIFORNIA BUILDING STANDARDS ADMINISTRATIVE CODE, TITLE 24 C.C.R.
2016 CALIFORNIA BUILDING CODE (CBC), TITLE 24 C.C.R.
2016 CALIFORNIA ELECTRICAL CODE (CEC), TITLE 24 C.C.R.
2016 CALIFORNIA MECHANICAL CODE (CMC), TITLE 24 C.C.R.
2016 CALIFORNIA PLUMBING CODE (CPC), TITLE 24 C.C.R.
2016 CALIFORNIA GREEN BUILDING CODE (CGBC)
2016 CALIFORNIA ENERGY CODE
2016 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
ANY OTHER LOCAL AND STATE LAWS AND REGULATIONS

SEISMIC NOTES

1. ALL ANCHORAGE AND/OR SEISMIC RESTRAINTS SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA.
2. THE ANCHORAGE AND/OR SEISMIC RESTRAINT OF PERMANENT EQUIPMENT AND ASSOCIATED SYSTEMS LISTED BELOW SHALL BE DESIGNED TO RESIST THE TOTAL DESIGN SEISMIC FORCES PRESCRIBED IN SECTION 1632.2A OF THE 2016 CALIFORNIA BUILDING CODE.
3. SEISMIC RESTRAINTS ARE REQUIRED FOR THE FOLLOWING INSTALLATIONS:
   A) ALL FLOOR OR ROOF MOUNTED EQUIPMENT WEIGHING 400 LBS. OR GREATER.
   B) ALL SUSPENDED OR WALL MOUNTED EQUIPMENT WEIGHING 20 LBS. OR GREATER.
   C) ALL VIBRATION ISOLATION EQUIPMENT WEIGHING 20 LBS. OR GREATER.
   D) ALL PIPING 1-1/4 INCHES NOMINAL DIAMETER AND LARGER LOCATED IN BOILER, MECHANICAL EQUIPMENT AND REFRIGERATION MECHANICAL ROOMS.
   E) ALL PIPING 2-1/2 INCHES NOMINAL DIAMETER AND LARGER.
   F) ALL DUCTWORK 6 SQUARE FEET AND LARGER IN CROSS SECTIONAL AREA.
   G) ALL ROUND DUCTWORK 28" IN DIAMETER AND GREATER.
   H) PIPES AND DUCTS SUPPORTED BY A TRAPEZE WHERE NONE OF THOSE ELEMENTS WOULD INDIVIDUALLY REQUIRE BRACING NEED NOT BE BRACED IF CONNECTIONS TO THE PIPE/DUCT OR DIRECTIONAL CHANGES DO NOT RESTRICT MOVEMENT OF THE TRAPEZE. IF THIS FLEXIBILITY IS NOT PROVIDED, BRACING IS REQUIRED WHEN THE COMBINED OPERATING WEIGHT OF ALL ELEMENTS SUPPORTED BY THE TRAPEZE IS 10 LBS/FT OR GREATER. SEE STRUCTURAL SHEETS S5.2 AND S5.3 FOR SEISMIC BRACING DETAILS.

GREEN BUILDING STANDARD NOTES

1. MINIMUM OF 50% OF NON HAZARDOUS CONSTRUCTION WASTE IS SHALL BE RECYCLE. CGC 5.713.8.1.
2. TESTING AND ADJUSTING OF NEW SYSTEMS SHALL COMPLY AS OUTLINED IN CGC SECTION 5.713.10.4.2.
3. OPERATIONS AND MAINTENANCE SCHEDULE (O&M) AS LISTED IN CGC SECTION 5.713.10.4.5 SHALL BE DELIVERED TO THE BUILDING OWNER OR REPRESENTATIVE AND THE FACILITIES OPERATOR.
4. DURING CONSTRUCTION, ENDS OF DUCT OPENING ARE SHALL BE SEALED, AND MECHANICAL EQUIPMENT IS SHALL BE COVERED. CGC 5.714.4.3.
5. VOC'S MUST COMPLY WITH THE LIMITATIONS LISTED IN SECTION 5.504.4 AND TABLES 4.504.1, 5.504.4.1, 5.504.4.2, 5.504.4.3 AND 5.504.4.5 FOR: ADHESIVES, SEALANTS, PAINTS, AND COATINGS, CARPET AND COMPOSITION WOOD PRODUCTS. CGC 5.714.4.4 .
6. PRIOR TO FINAL APPROVAL OF THE BUILDING THE LICENSED CONTRACTOR, ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE OVERALL SPONSTRUCTION SHALL COMPLETE AND SIGN THE CITY APPROVED GREEN BUILDING STANDARDS CERTIFICATION FORM OR OTHER DOCUMENTATION REQUIRED BY THE CITY AND GIVEN TO THE BUILDING DEPARTMENT OFFICIAL PRIOR TO BUILDING FINAL APPROVAL TO BE FILED WITH THE APPROVED PLANS.

TITLE 24 NOTES

1. ADDITIONAL VAV BOXES ARE BEING ADDED FOR THIS PROJECT.
2. NO ADDITIONAL COOLING/HEATING LOADS ARE BEING ADDED TO THE BUILDING HVAC SYSTEMS.
3. NO CHANGES ARE BEING MADE TO THE BUILDING ENVELOPE.
4. NEW DUCTWORK TO COMPLY WITH SECTION 149(b) 1D. STANDARDS.
5. NEW TITLE 24 CALCULATION IS NOT REQUIRED BECAUSE OF THE ABOVE NOTES.

MECHANICAL SHEET INDEX

PIPE MATERIAL SCHEDULE

SERVICES	APPLICATION	MATERIAL	REMARKS
HEATING HOT WATER, EXTERIOR	=<2" DIAMETER	RIGID COPPER (TYPE L)	JOINING METHOD OPTIONS INCLUDE BRAZING OR MECHANICAL JOINTS 1.5" THICK FIBERGLASSS INSULATION FOR PIPES 1-1/4" DIAMETER OR LESS 2" THICK FIBERGLASS INSULATION FOR PIPES 1-1/2" OR GREATER. COVER INSULATION WITH CORRUGATED ALUMINUM JACKET
CHILLED WATER EXTERIOR	=<2" DIAMETER AND COIL CONNECTIONS THAT ARE >2"	RIGID COPPER (TYPE L)	JOINING METHOD OPTIONS INCLUDE BRAZING OR MECHANICAL JOINT. 1.5" THICK FIBERGLASSS INSULATION COVER INSULATION WITH CORRUGATED ALUMINUM JACKET
CHILLED WATER EXTERIOR	>2" DIAMETER	STEEL STND WEIGHT	JOINING METHOD OPTIONS INCLUDE WELDING, FLANGED OR MECHANICAL COUPLINGS. ASJ JACKETED 1.5" THICK FIBERGLASS INSULATION. COVER INSULATION WITH CORRUGATED ALUMINUM JACKET
CHILLED WATER INTERIOR	>2" DIAMETER	STEEL STND WEIGHT	JOINING METHOD OPTIONS INCLUDE WELDING, FLANGED OR MECHANICAL COUPLINGS. ASJ JACKETED 1.5" THICK FIBERGLASSS INSULATION

NOTE: HYDRONIC PIPING INSTALLATION SHALL COMPLY WITH CHAPTER 12 PART I OF THE CMC.

DUCT MATERIAL SCHEDULE

SERVICES	APPLICATION	MATERIAL	REMARKS
SUPPLY	INDOOR MEDIUM PRESSURE MAIN	GALVANIZED STEEL G90	2" THICK FIBERGLASS DUCT LINER SYSTEM FOR ACOUSTICAL AND THERMAL CONTROL. R8 REFER TO NOTE 7.
RETURN	INDOOR MAIN	GALVANIZED STEEL G90	2" THICK FIBERGLASS LINER FOR ACOUSTICAL AND THERMAL CONTROL.R8
SUPPLY	EXTERIOR MAIN	GALVANIZED STEEL G90	CONSTRUCT TO 10" W.G. PRESSURE CLASS. TOP RIDGED AT CENTER LINE AND SLOPED TO DRAIN. >120" TO BE MINIMUM 16 GAUGE WITH INTERIOR TIE ROD BRACING NOT TO EXCEED 48" O.C. EXTERNAL ANGLE BRACING AT TIE ROD ATTACHMENTS. 2" THICK FIBERGLASS LINER FOR ACOUSTICAL AND THERMAL CONTROL.R8
SUPPLY	RISER CONNECTIONS TO AHU	GALVANIZED STEEL G90	1" THICK FIBERGLASS DUCT LINER SYSTEM FOR CONDENSATION CONTROL. R4.6. REFER TO NOTE 7.

NOTES:
1. PIPE INSULATION PER CEC 2016 BUILDING EFFICIENCY STANDARDS TABLE 120.3-A FOR 141-200 DEG F TEMPERATURE RANGE
2. DUCT INSULATION PER CEC 2016 BUILDING EFFICIENCY STANDARDS SECTION 120.4
   A. DUCTS WITHIN CONDITIONED SPACE OR WITHIN PLENUM SHALL HAVE INSULATION VALUE OF R4.6
3. AIR DISTRIBUTION SYSTEM DUCTS AND PLENUMS, INCLUDING BUT NOT LIMITED TO BUILDING CAVITIES, MECHANICAL CLOSETS, AIR HANDLER BOXES AND SUPPORT PLATFORMS SHALL BE SEALEDAND INSULATED PER CHAPTER 6 OF THE CMC.
   A. SUPPLY DUCTS AND PLENUMS FROM AIR HANDLER FAN DISCHARGE TO VAV TERMINAL - SEAL CLASS "A" FOR 4" W.G.
   B. SUPPLY DUCTS AND PLENUMS DOWNSTREAM OF VAV TERMINALS - SEAL CLASS" B" FOR 1" W.G.
   C. EXHAUST DUCTS AND PLENUMS WITHIN THE BUILDING ENVELOP - SEAL CLASS "A" FOR 2" W.G.
   D. RETURN AIR DUCTS AND PLENUMS WITHIN THE BUILDING ENVELOPE. - SEAL CLASS "B" FOR 2" W.G.
   E. CURB PLENUMS FOR RETURN - SEAL CLASS "A"
4. ACCESS DOORS INTO DUCTS SHALL BE DUCTMATE "SANDWICH" STYLE INSULATED AND GASKETED WTH HAND KNOBS. MINIMUM 24"X18".
5. SUPPLY AIR, RETURN AIR, AND OUTSIDE AIR FOR HEATING, COOLING OR EVAPORATIVE COOLING SYSTEMS SHALL BE CONDUCTED THROUGH DUCT SYSTEMS CONSTRUCTED OF METAL AS SET FORTH IN THE ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE, OR ANOTHER APPROVED DUCT CONSTRUCTION STANDARD
6. DUCT SYSTEMS USED WITH BLOWER TYPE EQUIPMENT WHICH ARE PORTIONS OF HEATING, COOLING, ABSORPTION, EVAPORATIVE COOLING OR OUTDOOR AIR VENTILATION SYSTEM SHALL BE SIZED IN ACCORDANCE WITH STANDARDS LISTED IN CHAPTER 17 OF 2016 CALIFORNIA MECHANICAL CODE.
7. DUCT LINER SYSTEM:
   A. JM LINACOUSTIC "RC" GLUED AND PINNED TO SHEET METAL.
   B. REFLECTIX "R 4.2" DUCT INSULATION GLUED TO LINACOUSTIC AND PINNED TO SHEET METAL. INSULATION VALUE IS ZERO. PROVIDESCLEANABLE FINISH SURFACE OVER LINER.50/25 SMOKE/FLAME INDEX
   C. PINS: WELD PINS WITH CUPPED WASHER. HEAT ACTIVATED ADHESIVE WASHERS. PIN LENGTH FOR TOTAL THICKNESS OF LINER AND FINISH
   D. TAPE SEAMS OF FINISH SURFACE WITH UL181 ACRYLIC ADHESIVE FOIL BACKED TAPE.
   E. EXPOSED EDGES ARE COATED WITH SEALANT AND PROTECTED BY SHEET METAL NOSING
8. EXISTING SUPPLY AND RETURN DUCT VERTICAL RISER DOWN TO FIRST ELBOW:
   A. CLEAN SOUND TRAPS AND DUCT. REPAIR DAMAGED SECTIONS OF DUCT LIBER.
   B. ENCAPSULATE DUCT LINER WITH SPRAY COATING OF CARLISLE R-500.

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SHEET TITLE
MECHANICAL GEN. NOTES, LEGEND, ABREV. & SHEET INDEX

SHEET NUMBER
M-001

SHEET NO. OF

CHILLED WATER AIR HANDLER SCHEDULE

TAG	STATUS	MAKE	MODEL	TYPE	LOCATION	SERVICE	SUPPLY FAN									PERFORMANCE (NOTE 1)		AIR SIDE (NOTE 1)							WATER (NOTE 1)				FILTER					ELECTRICAL			PHYSICAL				REMARKS
							CFM	OSA	TSG "WG	DRIVE	RPM	MOTOR QTY	MOTOR BHP EA	MOTOR HP EA	MOTOR RPM	SENSIBLE MBH	TOTAL MBH	ENTERING TDB	ENTERING TWB	LEAVING TDB	LEAVING TWB	TYPE AREA	TYPE FPM	TYPE ROWS	TYPE FINS	GPM	EWT	LWT	dP FT	QTY	L	W	D	PRESS. DROP IN WG	V	PH	MCA	L	W	H	WEIGHT (LBS)	
AH 2	EXISTING	DIAKIN	CAH039GDAM	CUSTOM STACKED, BELT, CHW	MECH RM.	SW & SE OFFICES - OCWD	10,800	2,220	2.75	BELT	850	1	3.3	10	850	297.6	341.6	82.3	66.3	55.8	55.4	500	480	6	12	68.3	45.0	55.0	12	6	20	25	2	0.28	460	3	-	-	-	-	-	(1)

NOTES:
(1) EXISTING AHU, ALL CONTROLS REMAIN AS IS. REBALANCE OSA INTAKE.

VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE FOR NEW ZONES

TAG	STATUS	SIZE INLET DIA (W)	SIZE OUTLET W	SIZE OUTLET H	SIZE OUTLET ROWS	MAKE	MODEL	TYPE	PERFORMANCE COOLING AIRFLOW	PERFORMANCE HEATING AIRFLOW	PERFORMANCE MAX AIRFLOW	PERFORMANCE MIN AIRFLOW	PERFORMANCE PRESSURE S.P.	PHYSICAL L	PHYSICAL W	PHYSICAL H	PHYSICAL WEIGHT	COMMENTS
VAV 23	EXISTING	10	14	12.5	2	TITUS	DESV	PRESSURE INDEPENDENT	910	995	1400	145	0.58	48	14	12.5	100	(1)
VAV 24	EXISTING	9	14	12.5	2	TITUS	DESV		855	925	1050	120	0.54	48	14	12.5	100	(1)
VAV 25	EXISTING	7	12	10	2	TITUS	DESV		520	630	650	70	0.23	48	12	10	100	(1)
VAV 26	EXISTING	16	24	16	2	TITUS	DESV		2730	1755	4000	385	0.43	51	24	16	200	(1)
VAV 27	EXISTING	12	16	15	2	TITUS	DESV		1110	910	2000	190	0.45	48	16	15	100	(1)
VAV 28	EXISTING	12	16	15	2	TITUS	DESV		765	600	2000	190	0.54	48	16	15	100	(1)
VAV 29	EXISTING	9	14	12.5	2	TITUS	DESV		630	600	1050	120	0.49	48	14	12.5	100	(1)
VAV 30	EXISTING	9	14	12.5	2	TITUS	DESV		570	410	1050	120	0.54	48	14	12.5	100	(1)
VAV 31	EXISTING	10	14	12.5	2	TITUS	DESV		1145	1000	1400	145	0.49	48	14	12.5	100	(1)
VAV 32	EXISTING	9	14	12.5	2	TITUS	DESV		600	350	1050	120	0.54	48	14	12.5	100	(1)
VAV 33	EXISTING	14	20	17.5	2	TITUS	DESV		2185	1785	3000	300	0.59	51	20	17.5	100	(1)
VAV 34	EXISTING	10	14	12.5	2	TITUS	DESV		1200	485	1400	145	0.44	48	14	12.5	100	(1)
VAV 40	EXISTING	6	6	8	2	TITUS	DESV		610	320	500	45	0.50	48	6	8	100	(1)
VAV 41	EXISTING	8	12	10	2	TITUS	DESV		430	485	900	90	0.50	48	12	10	100	(1)
VAV 42	EXISTING	6	6	8	2	TITUS	DESV		260	280	500	45	0.50	48	6	8	100	(1)

NOTES:
(1) EXISTING VAV BOX TO REMAIN AND USE.

DIFFUSER, REGISTER AND GRILL SCHEDULE

UNIT NO.	MANUFACTURER & MODEL NO.	DESCRIPTION	FACE TYPE	FACE SIZE	COLOR	MATERIAL	OBD	REMARKS
CD-1	TITUS MCD BORDER 3, OR EQUAL	MODULAR CORE	LAY IN	24"X24"	(8)	STEEL	NO	(1)(2)(3)(4)(5)(6)(7)
CD-2	TITUS PAS BORDER 1, OR EQUAL	MODULAR CORE	SURFACE	16"X16"	(8)	STEEL	NO	(1)(2)(3)(4)(5)(6)(7)
R-1	TITUS PAR, OR EQUAL	SQUARE CEILING RETURN	LAY-IN, PERFORATED	24"X24"	(8)	STEEL	NO	(1)(2)(3)(4)(5)(6)(7)
R-2	TITUS PAR, OR EQUAL	SQUARE CEILING RETURN	SURFACE, PERFORATED	16"X16"	(8)	STEEL	NO	(1)(2)(3)(4)(5)(6)(7)

NOTES:
(1) COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS FOR BORDER TYPES.
(2) MAXIMUM TOTAL PRESSURE DROP SHALL BE 0.1" WG.
(3) MAXIMUM NC LEVEL SHALL BE 25.
(4) ALL VISIBLE SURFACES AND DUCTWORK BEHIND FACE SHALL BE PAINTED BLACK.
(5) SEE SHEET M-401/2 THIS SHEET FOR TYPICAL CEILING DIFFUSER INSTALLATION DETAIL.
(6) NECK SIZE AND CFM SHOWN ON PLANS.
(7) PROVIDE MIN. 3" HIGH RECTANGULAR / SQUARE TO ROUND TRANSITION AS REQUIRED. ROUND NECK AREA SHALL EQUAL OR EXCEED RECTANGULAR NECK SIZE.
(8) COORDINATE THE COLOR WITH THE ARCHITECT.

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CHECKED BY	WM

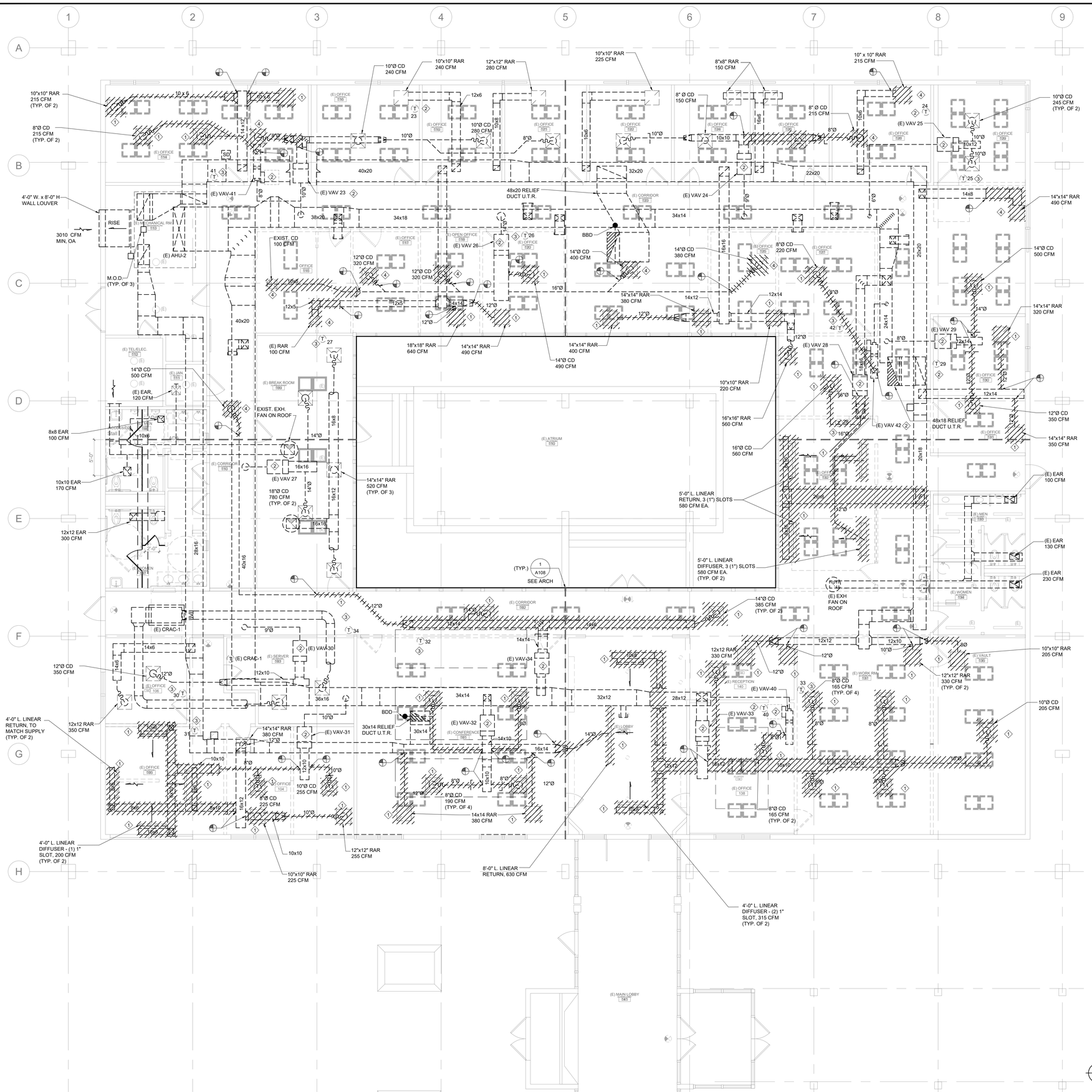
SHEET TITLE

MECHANICAL SCHEDULES

SHEET NUMBER

M-002

SHEET NO. OF



MECHANICAL DEMOLITION FLOOR PLAN 3/16"=1'-0" 1

DEMOLITION KEYNOTES

1. DEMOLISH (E) CEILING DIFFUSER AND ASSOCIATED FLEX DUCTWORK UP TO THE HARD DUCT BRANCH.
2. EXISTING TO REMAIN.
3. EXISTING THERMOSTAT TO BE REUSED AND RELOCATED.
4. DEMOLISH (E) CEILING DIFFUSER AND ASSOCIATED FLEX DUCTWORK AS SHOWN.

GENERAL NOTES

1. CLEAN AND REPAIR EXISTING DUCTWORK IF NEEDED DURING DEMOLITION PHASE TO PREVENT AIR LEAK AND HAVE CLEAR AIR PASSAGE INSIDE DUCTWORK.
2. REMOVE AND REPLACE EXISTING DUCTWORK INSULATIONS DEEM NECESSARY TO KEEP IT IN GOOD CONDITION.

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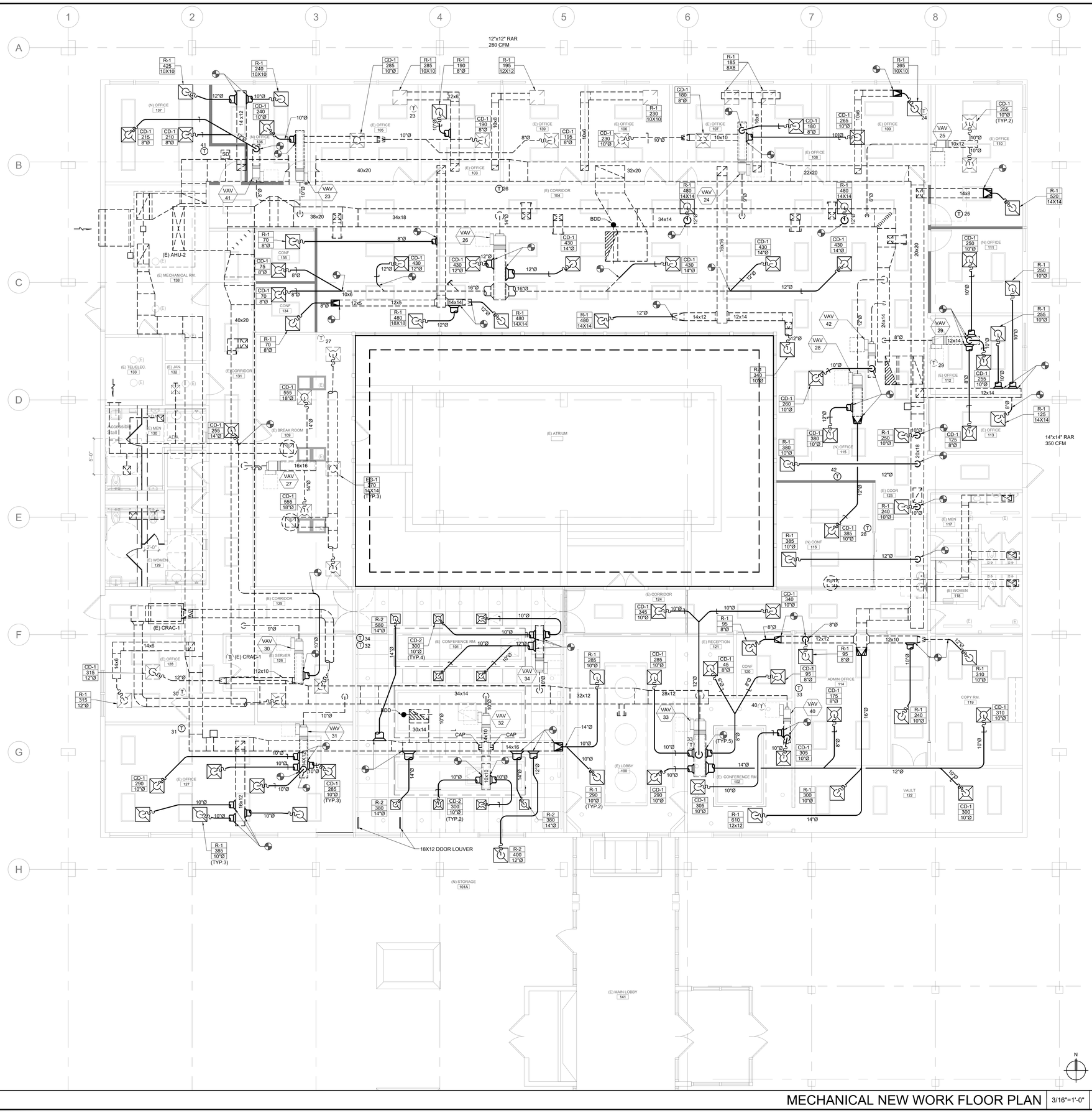
MECHANICAL
DEMOLITION
FLOOR PLAN

SHEET NUMBER
M-201

SHEET NO. OF



MECHANICAL NEW WORK FLOOR PLAN 3/16"=1'-0" 1

GENERAL NOTES

- A. COORDINATE DIFFUSER/RETURN LOCATION WITH LIGHTING LAYOUT. SEE ELECTRICAL DRAWINGS.
- B. MATERIAL INSTALLED IN THE PLENUMS SPACE ABOVE CEILING TILES SHALL COMPLY WITH CMC SECTION 602.2. FLAME SPREAD INDEX SHALL BE NOT MORE THEN 25 AND THE SMOKE DEVELOPMENT RATING SHALL BE NOT MORE THEN 50.
- C. DUCTWORK DIMENSIONS SHOWN ON DRAWINGS SHALL BE ACTUAL FREE INSIDE DIMENSIONS.
- D. DUCTWORK AND PIPING SHALL BE SUPPORTED AND BRACED IN ACCORDANCE WITH THE 2016 CBC/CMC AND THE LATEST EDITION OF SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING".
- E. EXHAUST DUCTS UNDER POSITIVE PRESSURE AND VENTING SYSTEMS SHALL NOT EXTEND INTO OR PASS THROUGH DUCTS OR PLENUMS (CMC 602.1)
- F. ALL MATERIAL EXPOSED WITHIN THE PLENUM SPACE SHALL COMPLY WITH CMC SECTION 605. MATERIALS SHALL HAVE A MOLD, HUMIDITY, AND EROSION RESISTANT FACE THAT MEETS THE REQUIREMENTS OF UL 181.
- G. MOUNT SPACE TEMPERATURE THERMOSTAT @ 48"MAX. A.F.F. VERIFY EXACT LOCATION WITH ARCHITECT.
- H. THE HVAC CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMITTING HIS/HER BID IN ORDER TO VERIFY ALL EXISTING FIELD CONDITIONS. THE HVAC DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ANY OFFSETS DUE TO EXISTING CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- I. COORDINATE ENTIRE INSTALLATION OF THE HVAC SYSTEM WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
- J. CONTRACTOR SHALL COORDINATE WIRING, FUSED DISCONNECT SWITCHES AND CONDUIT REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
- K. THE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT SHALL BE VERIFIED WITH THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO COMMENCEMENT OF WORK.
- L. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS DAMPERS, VALVES AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
- M. MAINTENANCE LABEL SHALL BE AFFIXED TO ALL MECHANICAL EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED FOR THE OWNERS USE.
- N. ALL HVAC EQUIPMENT SHALL BE CERTIFIED BY THE CALIFORNIA ENERGY COMMISSION TO COMPLY WITH EFFICIENCY STANDARDS PER TITLE-24 SECTIONS (2-5314 (A)(B)).
- O. ALL DUCTWORK SHALL BE CONSTRUCTED, SEALED, ERECTED AND TESTED IN ACCORDANCE WITH CHPT. 6 OF CMC. THE MOST RESTRICTIVE OF LOCAL REGULATIONS, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS, OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION.
- P. DUCT WORK HANDLING CONDITIONED AIR SHALL BE INSULATED OR LINED. INSULATION SHALL BE 1" THICK, 3/4" LB PER CUBIC FOOT DENSITY WITH MINIMUM R=2.1, EXCLUDING FILM RESISTANCE. ALL DUCT WORK EXPOSED SHALL BE INTERNALLY LINED. ACOUSTIC LINER SHALL BE 1-1/2".
- Q. MAKE CONNECTION TO CEILING DIFFUSERS WITH INSULATED "GLASSFLEX" LOW PRESSURE FLEXIBLE DUCT. PROVIDE 5'-0" LENGTH MINIMUM.
- R. PAINT INSIDE OF DUCT FLAT BLACK WHERE VISIBLE THRU AIR OUTLETS (VISIBLE LINER SHALL HAVE BLACK FACING).
- S. MANUAL VOLUME DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES TAKE OFF'S TO INDIVIDUAL DIFFUSERS AND REGISTERS.
- T. FOR CONCEALED ITEMS REQUIRING SERVICE OR ADJUSTMENT, PROVIDE AN ELECTRIC BALANCE DAMPER WHERE NO ACCESS IS AVAILABLE. SEE SHEET M401 DETAIL 7.
- U. ALL DAMPERS SHALL BE ACCESSIBLE THROUGH FELT STRIPPED ACCESS PANEL IN DUCT AND SHALL BE THE FULL SIZE OF THE DUCT, CONSTRUCT WITH CHANNEL FRAME AND TAG FOR EASY IDENTIFICATION AFTER INSTALLATION. DAMPERS IN LAY-IN CEILING AREA DO NOT REQUIRE ACCESS PANEL.
- V. FLEX DUCTS ARE NOT ALLOWED FOR TOILET EXHAUST.
- W. FLEXIBLE DUCTS SHALL BE FACTORY FABRICATED INSULATED LOW PRESSURE DUCT WITH THE FOLLOWING CHARACTERISTICS:
  1. ZINC COATED SPRING STEEL HELIX WITH (1) ONE INCH THICK FIBERGLASS INSULATION, SHEATHED IN A SEAMLESS VAPOR BARRIER JACKET.
  2. INTERIOR FIRE RESISTANT COATED TO PREVENT FIBER EROSION.
  3. CLASS 1 WITH A FLAME SPREAD OF 25 OR LESS, SMOKE DEVELOPED OF 50 OR LESS AS DEFINED IN NFPA-90(A) AND BEARING A U.L. LABEL.
- Y. ALL LINE AND LOW VOLTAGE WIRING SHALL BE INSTALLED IN A CONDUIT. ALL CONDUITS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AS INDICATED ON THE ELECTRICAL DRAWINGS OR AS SPECIFIED IN THE ELECTRICAL SPECIFICATIONS. ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS OF GOVERNING BODIES HAVING JURISDICTION THEREOF.
- Z. CONTRACTOR SHALL RAISE EXISTING DUCTWORK TO ACCOMMODATE NEW CEILING HEIGHT AS NEEDED.
- AA. RE-BALANCE THE SYSTEM AIRFLOW PER THE NEW MECHANICAL PLANS THAT'S INCLUDE DIFFUSERS, GRILLES & VAV BOXES.
- AB. REUSE ALL THE EXISTING THERMOSTATS AND RELOCATE SOME OF THEM AS NOTED ON THE MECHANICAL PLAN TO COMPLY WITH RENOVATION AIR DISTRIBUTION.

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MECHANICAL
NEW WORK
FLOOR PLAN

SHEET NUMBER

M-202

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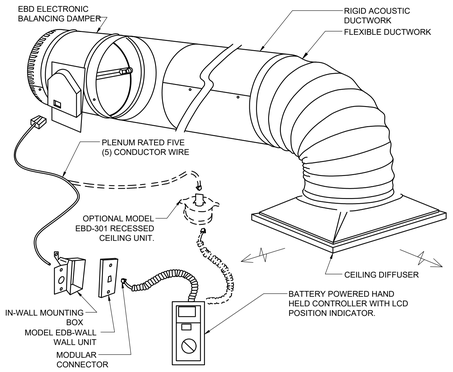
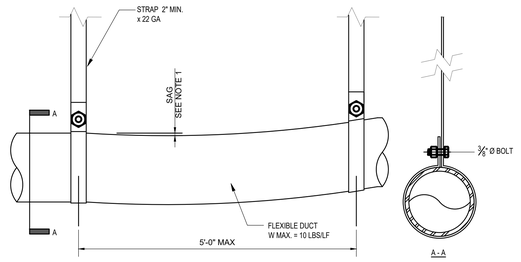


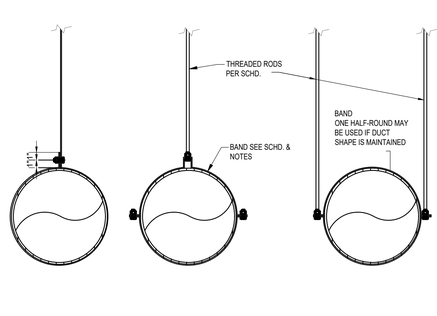
ELECTRONIC BALANCING DAMPER FOR INACCESSIBLE CONDITIONS | NO SCALE | 7



NOTES:

1. THE MAX. PERMISSIBLE SAG SHALL BE 1/2" PER FOOT OF SPACING BETWEEN SUPPORTS.
2. LONG HORIZONTAL FLEXIBLE DUCT RUNS WITH SHARP BEND SHALL HAVE ADDITIONAL SUPPORTS BEFORE AND AFTER THE BEND APPROXIMATELY ONE DUCT DIAMETER FROM THE CENTERLINE OF THE BEND
3. DUCT SHALL EXTEND STRAIGHT FOR ONE DUCT DIAMETER FROM A CONNECTION BEFORE BENDING

FLEXIBLE DUCT SUPPORT | NO SCALE | 4

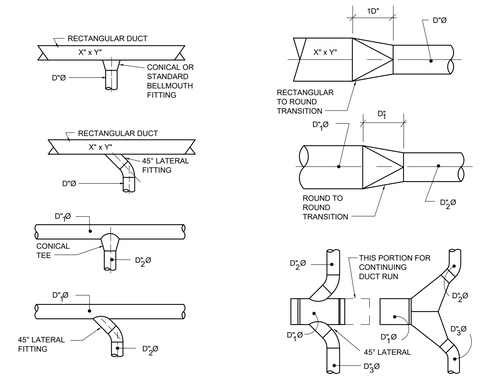


STRAP AND THREADED ROD HANGER SCHEDULE FOR ROUND DUCT				
DUCT DIAMETER	MAX. SPACING	ROD	STRAP	BAND
10" Ø OR LESS	8'-0" FT	3/8" Ø	1" x 22 GA	1" x 22 GA
11" Ø TO 18" Ø	8'-0" FT	3/8" Ø	1" x 20 GA	1" x 20 GA
19" Ø TO 24" Ø	8'-0" FT	3/8" Ø	1" x 20 GA	1" x 20 GA
25" Ø TO 36" Ø	8'-0" FT	(2) 3/8" Ø		1" x 20 GA
37" Ø TO 50" Ø	8'-0" FT	(2) 3/8" Ø		2" x 18 GA

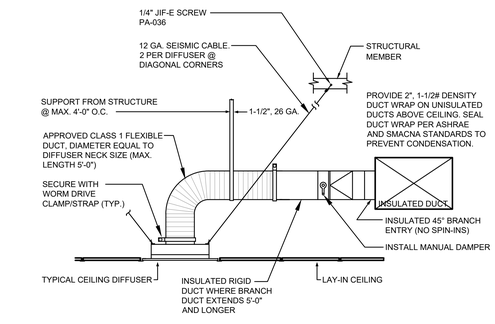
NOTES:

1. DUCTS SHALL BE EQUIPPED WITH TIGHT-FITTING CIRCULAR BANDS EXTENDING AROUND THE ENTIRE PERIMETER OF THE DUCT AT EACH SPECIFIED SUPPORT INTERVAL.
2. CIRCULAR BANDS SHALL BE NOT LESS THAN 1 INCH WIDE NOR LESS THAN EQUIVALENT TO THE GAUGE OF THE DUCT MATERIAL IT SUPPORTS.
3. EACH CIRCULAR BAND SHALL BE PROVIDED WITH CONNECTIONS TO THE SUSPENDING SUPPORT.

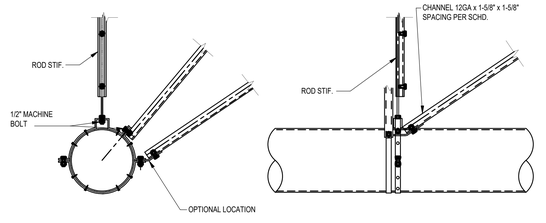
TRANSVERSE AND LONGITUDINAL BRACING FOR CIRCULAR DUCT | NO SCALE | 6



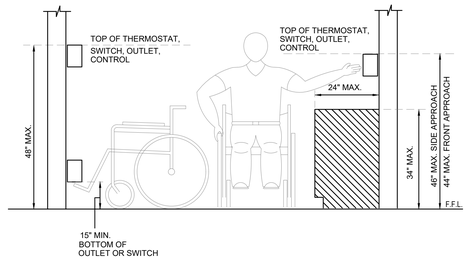
DUCT TRANSITION REQUIREMENTS | NO SCALE | 3



DIFFUSER MOUNTING DETAIL | N.T.S | 2



RIGID ROUND DUCT SUPPORT | NO SCALE | 5



CONTROL DEVICE MOUNTING DETAIL | N.T.S | 1

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MECHANICAL DETAILS

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SHEET NO. OF

STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E (Created 07/19) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-E

CERTIFICATE OF COMPLIANCE

Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in , or for alterations.

Project Name: MWDOC SEISMIC RETROFIT & TI — Report Page:
Project Address: 18700 Ward Street, Fountain Valley, CA 92708 — Date Prepared: 2020-02-05

A. GENERAL INFORMATION

01	Project Location (city)	Fountain Valley	04	Total Conditioned Floor Area	8432
02	Climate Zone	6	05	Total Unconditioned Floor Area	0
03	Occupancy Types Within Project:		06	# of Stories (Habitable Above Grade)	1

☑ Office ☐ Retail ☐ Non-refrigerated Warehouse ☐ Hotel/ Motel ☐ School
☐ High-Rise Residential ☐ Relocatable Class Bldg ☐ Other (Write In):

[1] *FOOTNOTES: Climate zone can be determined on the California Energy Commission's website at*

B. PROJECT SCOPE

Table Instructions: Include any mechanical systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in , or for alterations.

My project consists of (check all that apply)		
01	02	03
Air System(s)	Wet System Components	Dry System Components
☐ Heating Air System	☐ Water Economizer	☐ Air Economizer
☐ Cooling Air System	☐ Pumps	☐ Electric Resistance Heat
Mechanical Controls	☐ Hydronic System Piping	☐ Fan Systems
☐ Mechanical Controls	☐ Cooling Towers	☑ Ductwork
Scope Description	☐ Chillers	☐ Ventilation
	☐ Boilers	☐ Zonal Systems/ Terminal Boxes

Describe the scope of the mechanical systems included in the permit application. Include whether the systems are new, or being altered.

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01		02		03		04		05		06		07		08		09
System Summary , ,	AND	Pumps	AND	Fans/ Economizers	AND	System Controls , ,	AND	Ventilation	AND	Terminal Box Controls	AND	Distribution ,	AND	Cooling Towers		**Compliance Results**
(See Table F)		(See Table G)		(See Table H)		(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		
	AND		AND		AND		AND		AND		AND	Yes	AND			COMPLIES

Table Continued

STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E (Created 07/19) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-E

CERTIFICATE OF COMPLIANCE

Project Name: MWDOC SEISMIC RETROFIT & TI — Report Page:
Project Address: 18700 Ward Street, Fountain Valley, CA 92708 — Date Prepared: 2020-02-05

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. HVAC SYSTEM SUMMARY (DRY & WET SYSTEMS)

This Section Does Not Apply

G. PUMPS

This Section Does Not Apply

H. FAN SYSTEMS & AIR ECONOMIZERS

This Section Does Not Apply

I. SYSTEM CONTROLS

This Section Does Not Apply

J. VENTILATION

This Section Does Not Apply

K. TERMINAL BOX CONTROLS

This Section Does Not Apply

Duct Leakage Sealing

The answers to the questions below apply to the following duct system(s): AH-2 — Duct leakage testing triggered for: No

11	No	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space conditioning system.
12	No	The space conditioning system serves less than 5,000 ft² of conditioned floor area.
13	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:
		☐ Outdoors

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Project Name: MWDOC SEISMIC RETROFIT & TI — Report Page:
Project Address: 18700 Ward Street, Fountain Valley, CA 92708 — Date Prepared: 2020-02-05

Table Continued

	☐	In a space directly under a roof that has a U-factor greater than the U-factor of the ceiling, or if the roof does not meet the
	☐	In an unconditioned crawlspace
	☐	In other unconditioned spaces
14	No	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.
15	Yes	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and

Add Fact (System 1) — Remove Last

M. COOLING TOWERS

This Section Does Not Apply

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
⦿	○	NRCI-MCH-01-E - Must be submitted for all buildings.	☐	☐

STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E (Created 07/19) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-E

CERTIFICATE OF COMPLIANCE

Project Name: MWDOC SEISMIC RETROFIT & TI — Report Page:
Project Address: 18700 Ward Street, Fountain Valley, CA 92708 — Date Prepared: 2020-02-05

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE AND VERIFICATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at (for Certificates of Acceptance) and (for Certificates of Verification).

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
○	⦿	NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. *Note: MCH02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.*	☐	☐
○	⦿	NRCA-MCH-03-A Constant Volume Single Zone HVAC *NOTE: This form does not automatically move to "Yes". If constant volume, single zone unitary AC/HP Systems are included in the scope, permit applicant should move this form to "Yes".*	☐	☐
○	⦿	NRCA-MCH-04-A Air Distribution Duct Leakage	☐	☐
○	⦿	NRCV-MCH-04-H Duct Leakage Test *NOTE: Must be completed by a HERS Rater*	☐	☐
○	⦿	NRCA-MCH-05-A Air Economizer Controls	☐	☐
○	⦿	NRCA-MCH-06-A Demand Control Ventilation Systems Acceptance must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)3) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO2) concentration setpoints.	☐	☐
○	⦿	NRCA-MCH-07-A Supply Fan Variable Flow Controls	☐	☐
○	⦿	NRCA-MCH-08-A Valve Leakage Test	☐	☐
○	⦿	NRCA-MCH-09-A Supply Water Temperature Reset Controls	☐	☐
○	⦿	NRCA-MCH-10-A Hydronic System Variable Flow Controls	☐	☐
○	⦿	NRCA-MCH-11-A Automatic Demand Shed Controls	☐	☐
○	⦿	NRCA-MCH-12-A FDD for Packaged Direct Expansion Units *NOTE: This form does not automatically move to "Yes". If package DX Systems are included in the scope, permit applicant should move this form to "Yes".*	☐	☐
○	⦿	NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance	☐	☐
○	⦿	NRCA-MCH-14-A Distributed Energy Storage DX AC Systems Acceptance *NOTE: This form does not automatically move to "Yes". If Distributed Energy Storage DX AC Systems are included in the scope, permit applicant should move this form to "Yes".*	☐	☐
○	⦿	NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance	☐	☐
○	⦿	NRCA-MCH-16-A Supply Air Temperature Reset Controls	☐	☐
○	⦿	NRCA-MCH-17-A Condenser Water Temperature Reset Controls	☐	☐
○	⦿	NRCA-MCH-18 Energy Management Control Systems	☐	☐

STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E (Created 07/19) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-E

CERTIFICATE OF COMPLIANCE

Project Name: MWDOC SEISMIC RETROFIT & TI — Report Page:
Project Address: 18700 Ward Street, Fountain Valley, CA 92708 — Date Prepared: 2020-02-05

P. MANDATORY MEASURES DOCUMENTATION LOCATION

Table Instructions: Indicate where mandatory measures are documented in the plan set or construction documentation. For any mandatory measures that do not apply, mark

01		02
		Plan sheet or construction document location
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block:	Yes	

STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E (Created 07/19) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-E

CERTIFICATE OF COMPLIANCE

Project Name: MWDOC SEISMIC RETROFIT & TI — Report Page:
Project Address: 18700 Ward Street, Fountain Valley, CA 92708 — Date Prepared: 2020-02-05

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Documentation Author Name:	Alexander Yau	Documentation Author Signature:	
Company:	IDS Group	Signature Date:	2020-02-05
Address:	1 Peters Canyon RD Suite 130	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Irvine/CA/92606	Phone:	(949) 387-8500

RESPONSIBLE PERSON'S DECLARATION STATEMENT

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Walter Maclean	Responsible Designer Signature:	Walter Maclean
Company:	IDS Group	Date Signed:	2020-02-05
Address:	1 Peters Canyon RD Suite 130	License:	M31382
City/State/Zip:	Irvine/CA/92606	Phone:	(949) 387-8500

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-01-E

CERTIFICATE OF COMPLIANCE

Mechanical Systems — Page of

Project Name: MWDOC SEISMIC RETROFIT & TI — Date Prepared: 02/05/2020

A. MECHANICAL COMPLIANCE DOCUMENTS & WORKSHEETS (check box if worksheet is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2016 Nonresidential Manual
Note: The Enforcement Agency may require all forms to be incorporated onto the building plans.

YES	NO	Comp. Doc./Worksheet #	Title
⦿	○	NRCC-MCH-01-E (Part 1 of 3)	Certificate of Compliance, Declaration. Required on plans for all submittals.
⦿	○	NRCC-MCH-01-E (Part 2 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-02-A to 11-A). Required on plans for all submittals.
⦿	○	NRCC-MCH-01-E (Part 3 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-12-A to 18-A). Required on plans where applicable
⦿	○	NRCC-MCH-02-E (Part 1 of 2)	Mechanical Dry Equipment Summary is required for all submittals with Central Air Systems. It is optional on plans.
⦿	○	NRCC-MCH-02-E (Part 2 of 2)	Mechanical Wet Equipment Summary is required for all submittals with chilled water, hot water or condenser water systems. It is optional on plans.
○	⦿	NRCC-MCH-03-E	Mechanical Ventilation and Reheat is required for all submittals with multiple zone heating and cooling systems. It is optional on plans.
○	⦿	NRCC-MCH-07-E (Part 1 of 2)	Power Consumption of Fans. Required on plans where applicable
○	⦿	NRCC-MCH-07-E (Part 2 of 2)	Power Consumption of Fans, Declaration. Required on plans where applicable

B. MECHANICAL HVAC ACCEPTANCE FORMS (check box for required compliance documents)

Test Performed By:

Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.

Installing Contractor:
The contractor who installed the equipment is responsible to either conduct the acceptance test themselves or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portion of the construction or installation for which they are responsible.

Enforcement Agency:
Plancheck - The NRCC-MCH-01-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked.

Test Description		MCH-02-A	MCH-03-A	MCH-04-A	MCH-05-A	MCH-06-A	MCH-07-A	MCH-08-A	MCH-09-A	MCH-10-A	MCH-11-A
Equipment Requiring Testing or Verification	# of Units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Controlled Ventilation (DCV)	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control
None		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Add Row — Remove Last

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-01-E

CERTIFICATE OF COMPLIANCE

Mechanical Systems — Page of

Project Name: MWDOC SEISMIC RETROFIT & TI — Date Prepared: 02/05/2020

C. MECHANICAL HVAC ACCEPTANCE FORMS (check box for required compliance documents)

Test Performed By:

Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.

Installing Contractor:
The contractor who installed the equipment is responsible to either conduct the acceptance test themselves or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portion of the construction or installation for which they are responsible.

Enforcement Agency:
Plancheck - The NRCC-MCH-01-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked.
Inspector - Before occupancy permit is granted all newly installed process systems must be tested to ensure proper operations.

Test Description		MCH-12-A	MCH-13-A	MCH-14-A	MCH-15-A	MCH-16-A	MCH-17-A	MCH-18-A
Equipment Requiring Testing or Verification	# of Units	Fault Detection & Diagnostics for DX Units	Automatic Fault Detection & Diagnostics for Air & Zone	Distributed Energy Storage DX AC Systems	Thermal Energy Storage (TES) Systems	Supply Air Temperature Reset Controls	Condenser Water Reset Controls	ECMS
None		☐	☐	☐	☐	☐	☐	☐

Add Row — Remove Last

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-MCH-01-E

Mechanical Systems — Page of

Project Name: MWDOC SEISMIC RETROFIT & TI — Date Prepared: 02/05/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Alexander Yau	Documentation Author Signature:	
Company:	IDS Group	Signature Date:	02/05/2020
Address:	1 Peters Canyon RD Suite 130	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Irvine/CA/92606	Phone:	(949) 387-8500

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Walter Maclean	Responsible Designer Signature:	Walter Maclean
Company:	IDS Group	Date Signed:	02/05/2020
Address:	1 Peters Canyon RD Suite 130	License:	M31382
City/State/Zip:	Irvine/CA/92606	Phone:	(949) 387-8500

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS

IDS GROUP

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

STAMP

ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	AY
CHECKED BY	WM

SHEET TITLE

TITLE 24

SHEET NUMBER

M-801

SHEET NO. OF

STATE OF CALIFORNIA
HVAC DRY & WET SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Dry System Requirements	(Page 1 of 3)
Project Name: MWDOC SEISMIC RETROFIT & TI	Date Prepared: 02/05/2020

A. Equipment Tags and System Description[1]- Dry Systems

MANDATORY MEASURES	T-24 Sections	AH-2 Reference to the Requirements in the Contract Documents[2]					
Heating Equipment Efficiency[3]	110.1 or 110.2(a)	N/A					
Cooling Equipment Efficiency[4]	110.1 or 110.2(a)	N/A					
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)	N/A					
Furnace Standby Loss Control	110.2(d)	N/A					
Low Leakage AHUs	110.2(f)	N/A					
Ventilation[5]	120.1(b)	YES					
Demand Control Ventilation[6]	120.1(c)4	N/A					
Occupant Sensor Ventilation Control[6]	120.1(c)5, 120.2(e)3	N/A					
Shutoff and Reset Controls[7]	120.2(e)	N/A					
Outdoor Air and Exhaust Damper Control	120.2(f)	N/A					
Isolation Zones	120.2(g)	N/A					
Automatic Demand Shed Controls	120.2(h)	N/A					
Economizer FDD	120.2(i)	N/A					
Duct Insulation	120.4	YES					
PRESCRIPTIVE MEASURES							
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	○ Yes ◉ No		○ Yes ○ No		○ Yes ○ No	
Supply Fan Pressure Control	140.4(c)	N/A					
Simultaneous Heat/Cool[8]	140.4(d)	N/A					
Economizer	140.4(e)	N/A					
Heat and Cool Air Supply Reset	140.4(f)	N/A					
Electric Resistance Heating[9]	140.4(g)	N/A					
Duct Leakage Sealing and Testing.[10]	140.4(l)	N/A					

Notes:
1. *Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together.*
2. *Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.*
3. *The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq.*
4. *Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more spaces is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document.*
5. *If one or more spaces has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation.*
6. *If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation.*
7. *If the system is DDC identify the sequences for the system start/stop, optimal start, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable).*
8. *Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E compliance document.*
9. *Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.*
10. *If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.*

STATE OF CALIFORNIA
HVAC DRY & WET SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Dry & Wet System Requirements	(Page 2 of 3)
Project Name: MWDOC SEISMIC RETROFIT & TI	Date Prepared: 02/05/2020

B. Equipment Tags and System Description[1]- Wet Systems

MANDATORY MEASURES	T-24 Sections	AH-2 Reference to the Requirements in the Contract Documents[2]					
Heating Hot Water Equipment Efficiency[3]	110.1	N/A					
Cooling Chilled and Condenser Water Equipment Efficiency[4]	110.1, 140.4(i)	N/A					
Open and Closed Circuit Cooling Towers conductivity or flow-based controls	110.2(e) 1	N/A					
Open and Closed Circuit Cooling Towers Maximize Achievable Cycles of Concentration (LSI)[5]	110.2(e) 2	N/A					
Open and Closed Circuit Cooling Towers Flow Meter with analog output	110.2(e) 3	N/A					
Open and Closed Circuit Cooling Towers Overflow Alarm	110.2(e) 4	N/A					
Open and Closed Circuit Cooling Towers Efficient Drift Eliminators	110.2(e) 5	N/A					
Pipe Insulation	120.3	N/A					
PRESCRIPTIVE MEASURES							
Cooling Tower Fan Controls	140.4(h)2, 140.4(h)5	○ Yes ◉ No		○ Yes ○ No		○ Yes ○ No	
Cooling Tower Flow Controls	140.4(h)3	N/A					
Centrifugal Fan Cooling Towers[6]	140.4(h)4	N/A					
Air-Cooled Chiller Limitation[7]	140.4(j)	N/A					
Variable Flow System Design	140.4(k)	N/A					
Chiller and Boiler Isolation	140.4(k)	N/A					
CHW and HHW Reset Controls	140.4(k)	N/A					
W/HP Isolation Valves	140.4(k)	N/A					
VSD on CHW, CW & W/HP Pumps >5HP	140.4(k)	N/A					
DP Sensor Location	140.4(k)	N/A					

Notes:
1. *Provide equipment tags (e.g. CH 1 to 3) or system description (e.g. CHW loop) as appropriate. Multiple units with common requirements can be grouped together.*
2. *Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.*
3. *The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. For chillers operating at non-standard efficiencies provide the Kadj values. For chillers also note whether the efficiencies are Path A or Path B.*
4. *Identify if cooling towers have propeller fans. If towers use centrifugal fans document which exception is used.*
5. *If air-cooled chillers are used, document which exceptions have been used to comply with 140.4(j) and the total installed design capacity of the air-cooled chillers in the chilled water plant.*
6. *Identify the existence of a completed MCH-06-E when open or closed circuit cooling towers are specified to be installed, otherwise enter "N/A".*

STATE OF CALIFORNIA
HVAC SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Wet System Requirements	(Page 3 of 3)
Project Name: MWDOC SEISMIC RETROFIT & TI	Date Prepared: 02/05/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Alexander Yau	Documentation Author Signature:
Company: IDS Group	Signature Date: 02/05/2020
Address: 1 Peters Canyon RD Suite 130	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Irvine/CA/92606	Phone: (949) 387-8500

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
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Responsible Designer Name: Walter Maclean	Responsible Designer Signature: Walter M Maclean
Company: IDS Group	Date Signed: 02/05/2020
Address: 1 Peters Canyon RD Suite 130	License: M31382
City/State/Zip: Irvine/CA/92606	Phone: (949) 387-8500

STATE OF CALIFORNIA
REQUIRED ACCEPTANCE TESTS
CEC-NRCC-MCH-04-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	Page of
Project Name: MWDOC SEISMIC RETROFIT & TI	Date Prepared: 02/05/2020

A. MECHANICAL COMPLIANCE FORMS & WORKSHEETS
(indicate if worksheet is included)

For detailed instructions on the use of this and all Energy Standards compliance documents, refer to the 2016 Nonresidential Manual
Note: The Enforcement Agency may require all compliance documents to be incorporated onto the building plans. The NRCC-MCH-04-E and NRCC-MCH-05-E are alternative compliance documents to NRCC-MCH-01-E, NRCC-MCH-02-E and NRCC-MCH-03-E for projects using only single zone packaged HVAC systems.

YES	NO	Form	Title
◉	○	NRCC-MCH-04-E (1 of 2)	Certificate of Compliance. Required on plans when used.
○	◉	NRCC-MCH-04-E (2 of 2)	Mechanical Acceptance Tests. Required on plans when used.
○	◉	NRCC-MCH-05-E (1 of 2)	HVAC Prescriptive Requirements. It is required on plans when used.
○	◉	NRCC-MCH-05-E (2 of 2)	Mechanical SWH Equipment Summary is required for all submittals with service water heating, pools or spas. It is required on plans where applicable.

STATE OF CALIFORNIA
REQUIRED ACCEPTANCE TESTS
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Required Acceptance Tests	Page of
Project Name: MWDOC SEISMIC RETROFIT & TI	Date Prepared: 02/05/2020

Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and list all equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The NA number designates the Section in the Appendix of the Nonresidential Reference Appendices Manual that describes the test. Specific this compliance document will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Enforcement Agency:
Systems Acceptance. Before occupancy permit is granted for a newly constructed building or space, or a new space conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.

Systems Acceptance. Before occupancy permit is granted all newly installed HVAC equipment must be tested using the Acceptance Requirements. The NRCC-MCH-04-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked. The equipment requiring testing, person performing the test (Example: HVAC installer, TAB contractor, controls contractor, PE in charge of project) and what Acceptance test must be conducted. The following checked-off forms are required for ALL newly installed and replaced equipment. In addition a Certificate of Acceptance compliance documents shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of Section 10-103(b) and Title 24 Part 6. The building inspector must receive the properly filled out and signed compliance documents before the building can receive final occupancy.

Test Description	MCH-02-A	MCH-03-A	MCH-04-A	MCH-05-A	MCH-06-A	MCH-07-A	MCH-11-A	MCH-12-A	MCH-14-A	MCH-18-A	
Equipment Requiring Testing or Verification	# of Units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation (DCV)	Supply Fan VAV	Automatic Demand Shed Control	FDD for Packaged DX Units	Distributed Energy Storage DX AC Systems	Energy Management Control System	Test Performed By:
None	0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Add Row | Remove Last

STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	Page of
Project Name: MWDOC SEISMIC RETROFIT & TI	Date Prepared: 02/05/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Alexander Yau	Documentation Author Signature:
Company: IDS Group	Signature Date: 02/05/2020
Address: 1 Peters Canyon RD Suite 130	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Irvine/CA/92606	Phone: (949) 387-8500

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
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STATE OF CALIFORNIA
REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS
CEC-NRCC-MCH-05-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units	(Page 1 of 2)
Project Name: MWDOC SEISMIC RETROFIT & TI	Date Prepared: 02/05/2020

Equipment Tag(s)[1]		AH-2					
MANDATORY MEASURES	T-24 Sections	Requirement[2]	As Scheduled[3]	Requirement[2]	As Scheduled[3]	Requirement[2]	As Scheduled[3]
Heating Equipment Efficiency[4]	110.1 or 110.2(a)	N/A					
Cooling Equipment Efficiency[4]	110.1 or 110.2(a)	N/A					
Thermostats[5]	110.2(b), 110.2(c)	N/A					
Furnace Standby Loss Control[6]	110.2(d)	N/A					
Low Leakage AHU	110.2(f)	N/A					
Ventilation[7]	120.1(b)	2196	2220				
Demand Control Ventilation[8]	120.1(c)4	N/A					
Occupant Sensor Ventilation Control[8]	120.1(c)5, 120.2(e)3	N/A					
Shutoff and Reset Controls[9]	120.2(e)	N/A					
Outdoor Air and Exhaust Damper Control	120.2(f)	N/A					
Automatic Demand Shed Controls	120.2(h)	N/A					
Economizer FDD	120.2(i)	N/A					
Duct Insulation	120.4	YES					
PRESCRIPTIVE MEASURES							
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	N/A					
Economizer	140.4(e)	N/A					
Electric Resistance Heating[10]	140.4(g)	N/A					
Duct Leakage Sealing and Testing.[11]	140.4(l)	N/A					

Notes:
1. *Provide equipment tags (e.g. AC1 or AC1 to 10). Multiple units of the same make and model with the same application and accessories can be grouped together.*
2. *Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity (enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtuh or tons).*
3. *For each requirement, enter the minimum requirement from the Standard in the left column (under "Standard Requirement"). In the right column (under "As Scheduled") enter the value for the units as specified.*
4. *Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER).*
5. *In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heatpump with electric heat). In the right column indicate the capabilities of the thermostat as scheduled.*
6. *If the unit has a furnace which is rated at ≥ 225,000 Btuh of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for <225,000 Btuh indicate "N/A".*
7. *In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column.*
8. *If the space is required to have either DCV or Occupant Sensor Ventilation Control indicate "required" in the left column (otherwise indicate "N/A" in the left column). If either DCV or Occupant Sensor Ventilation Control is provided indicate "provided" in the right column (otherwise indicate "N/A" in the right column)*
9. *In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock).*
10. *Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.*
11. *If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.*

STATE OF CALIFORNIA
REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS
CEC-NRCC-MCH-05-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units	(Page 2 of 2)
Project Name: MWDOC SEISMIC RETROFIT & TI	Date Prepared: 02/05/2020

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CLIENT

MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

STAMP

ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	AY
CHECKED BY	WM

SHEET TITLE

TITLE 24

SHEET NUMBER

M-802

SHEET NO. OF

ELECTRICAL SYMBOLS, SPECIFICATION AND ABBREVIATIONS

SPECIFICATIONS

1. ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES (UL) AND BEAR THEIR LABEL, OR LISTED AND CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) WHERE UL DOES NOT HAVE A LISTING.
2. THE ELECTRICAL WORK SHALL INCLUDE LABOR, SUPERVISION, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, INSURANCE AND PERFORM OPERATIONS REQUIRED TO CONSTRUCT AND INSTALL COMPLETE AND OPERATIVE ELECTRICAL SYSTEMS IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS.
3. MATERIALS FURNISHED AND WORK INSTALLED SHALL COMPLY WITH THE CURRENT ACCEPTED VERSION OF THE NEC, MUNICIPAL REQUIREMENTS, STATE OF CALIFORNIA AND APPLICABLE REQUIREMENTS OF OSHA.
4. OBTAIN AND PAY FOR REQUIRED ELECTRICAL PERMITS AND INSPECTIONS. PAY APPLICABLE STATE SALES TAX.
5. WORK INTENDED, BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED OR NOT SHOWN SHALL BE FURNISHED AND INSTALLED COMPLETE TO PERFORM REQUIRED FUNCTION.
6. WHERE CONFLICTS OCCUR ON DRAWINGS AND/OR SPECIFICATIONS THE MOST STRINGENT APPLICATION SHALL APPLY.
7. THE ENTIRE ELECTRICAL SYSTEM SHALL BE LEFT IN PROPER WORKING ORDER. REPLACE ANY WORK OR MATERIAL PROVIDED FOR UNDER THIS CONTRACT WHICH DEVELOPS DEFECTS WITHIN ONE (1) YEAR OF FINAL ACCEPTANCE BY OWNER.
8. COORDINATE WORK SO THAT IT DOES NOT INTERFERE WITH THE WORK OF OTHER TRADES. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO SEE THAT THIS WORK IS INSTALLED IN A TIMELY MANNER.
9. PROVIDE AND MAINTAIN AN ADEQUATE TEMPORARY POWER, FIRE ALARM AND LIGHTING SYSTEM. REMOVE AFTER CONSTRUCTION IS COMPLETE.
10. INTERIOR WIRING SHALL BE IN "EMT", WITH SET-SCREW STEEL FITTINGS. TYPE MC CABLE MAY BE USED FOR BRANCH CIRCUIT WIRING WHERE CONCEALED ABOVE DROP CEILING AND WHERE ALLOWED BY CODE AND OWNER. MINIMUM CONDUIT SHALL BE 3/4 INCH UNLESS OTHERWISE NOTED.
11. ALL RACEWAYS TO CONTAIN SEPARATE EQUIPMENT GROUNDING CONDUCTOR SIZED PER CEC 250.
12. WIRE SHALL BE "THHN" OR "XHHW", COPPER, 90 DEGREES CELSIUS, 600 VOLTS, SOLID SIZE 10 AND SMALLER, STRANDED SIZE 8 AND LARGER. PROVIDE FEEDER AND BRANCH CIRCUITS WITH A GREEN-INSULATED EQUIPMENT GROUNDING CONDUCTOR SIZED PER CEC 250-122. TERMINATIONS FOR ELECTRICAL EQUIPMENT SHALL BE RATED FOR 75 DEGREES CELSIUS.
13. PROVIDE LIGHTING FIXTURES COMPLETE WITH LAMPS, HANGERS AND INCIDENTALS. FIXTURES SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE ABOVE.
14. PROVIDE PANELBOARDS WITH COPPER BUSBARS, FULLY RATED, OF THE SAME MANUFACTURER. (SQUARE D, CUTLER-HAMMER, GE OR SIEMENS). PROVIDE SCREW-ON ENGRAVED NAMEPLATES FOR DISTRIBUTION EQUIPMENT. DISCONNECT SWITCHES SHALL BE HEAVY DUTY.
15. LOCATE LIGHTING FIXTURES AS SHOWN ON ARCHITECTURAL REFLECTED CEILING PLAN. WHERE THERE IS A CONFLICT BETWEEN THE ARCHITECTURAL AND ELECTRICAL DRAWINGS ON QUANTITY AND LOCATION, CONTACT THE ELECTRICAL ENGINEER TO VERIFY THE DESIGN PRIOR TO BID.
16. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.
17. ALL PENETRATIONS OF FIRE RATED FLOORS OR SHAFT WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO UNDERWRITER LABORATORIES LISTINGS FOR THROUGH PENETRATION FIRE STOP SYSTEMS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING DETAILS WHICH SHOW COMPLETE CONFORMANCE TO THE U.L. LISTING TO THE ARCHITECT/ENGINEER AND SUCH DRAWINGS SHALL BE AVAILABLE TO THE CITY INSPECTORS. THE DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION WITH ALL VARIABLES DEFINED.
18. SUBMIT FOR APPROVAL EIGHT (8) SETS OF SHOP DRAWINGS ON THE FOLLOWING: PANELBOARDS, CIRCUIT BREAKERS, DISCONNECT SWITCHES, LIGHTING FIXTURES, LAMPS, DEVICES AND COVERPLATES AND ANY OTHER ITEMS REQUESTED BY THE ARCHITECT.
19. PROVIDE EQUIPMENT AND MATERIAL AS SPECIFIED, APPROVED MANUFACTURERS ARE LISTED. SUBSTITUTIONS OF EQUAL OR BETTER WILL BE CONSIDERED BY ENGINEER.
20. VISIT THE SITE AND CONFIRM EXISTING CONDITIONS EFFECTING SCOPE OF WORK. VERIFY ALL ROUTING OF SYSTEMS AND FEEDERS.
21. PROVIDE SPECIFICATION GRADE WIRING DEVICES WITH HIGH IMPACT THERMO-PLASTIC COVER PLATES. COLOR AS SELECTED BY ARCHITECT. CONTROLLED RECEPTACLES SHALL BE MARK/IDENTIFIED. WIRING DEVICES SHALL BE ARROW-HART, GE, PASS & SEYMOUR OR LEVITON.
22. THESE DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR IS REQUIRED TO VERIFY DIMENSIONS, SIZES, LOCATION OF EQUIPMENT, ROUTING OF CONDUITS AND LAYOUT WITH OTHER WORK. PROVIDE THE NECESSARY QUANTITY OF CONDUCTORS TO MAKE THE SYSTEMS COMPLETE AND OPERATIONAL.
23. UPDATE PANEL DIRECTORY CARD FOR ANY MODIFICATION TO EXISTING DISTRIBUTION AND PANEL BOARD, INCLUDING CIRCUITS CONVERTED TO SPARES.
24. PREPARE AND SUBMIT AS-BUILT DRAWINGS FOR ALL WORK INCLUDED IN DIVISION 26. AS-BUILT DRAWINGS SHALL INCLUDE ALL FIELD CHANGES PERFORMED DURING CONSTRUCTION AND SHALL REFLECT AS CLOSELY AS POSSIBLE THE ACTUAL INSTALLATION, SIZING, CONFIGURATIONS AND NOTATIONS.
25. CONDUITS WHICH ARE INSTALLED AT THIS TIME AND LEFT EMPTY FOR FUTURE USE SHALL HAVE PULL WIRE LEFT IN PLACE, LABEL AND IDENTIFY PER CODE.
26. KEEP RACEWAYS AT LEAST 6 INCHES AWAY FROM PARALLEL RUNS OF HOT-WATER PIPES OR OTHERWISE.
27. PROVIDE MINIMUM CONDUIT SIZE, 3/4" IF APPLICABLE
28. DEPTH OF THE ELECTRICAL BOX REQUIRED FOR PROPOSED CONSTRUCTION. (1-1/4" DEEP Vs 2 - 1/8") 4 INCHES SQUARE BOXES. WHENEVER SPECIFICATION OR DRWAING ITEMS ARE SPECIFIED NOTED OR DRAWN MULTIPLE AND / OR CONFLICTING REQUIREMENTS, THE MOST STRINGENT CRITERIA SHALL APPLY.

CABLING NOTES

1. WIRING - ONLY WIRING METHODS CONSISTING OF TYPE MC CABLE EMPLOYING A SMOOTH OR CORRUGATED IMPERVIOUS METAL SHEATH WITHOUT AN OVERALL NONMETALLIC COVERING, ELECTRICAL METALLIC TUBING, INTERMEDIATE METAL CONDUIT, OR RIGID METAL CONDUIT IS PERMITTED. FLEXIBLE METAL CONDUIT AND LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE PERMITTED, IN LENGTHS NOT TO EXCEED 4 FEET, TO CONNECT PHYSICALLY ADJUSTABLE EQUIPMENT AND DEVICES THAT ARE PERMITTED IN THE PLENUM. (NEC 300-22b).
2. COMMUNICATION CABLES - CABLES INSTALLED IN DUCTS, PLENUMS AND OTHER SPACES USED FOR ENVIRONMENT AIR SHALL BE TYPE CMP. TYPES CMP, CMR, CMG, CM AND CMX AND COMMUNICATIONS WIRE SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING, INTERMEDIATE METAL CONDUIT, RIGID METAL CONDUIT, FLEXIBLE METAL CONDUIT, OR, WHERE ACCESSIBLE, SURFACE METAL RACEWAY OR WIRE WAY WITH METAL COVERS OR SOLID BOTTOM METAL CABLE TRAY WITH SOLID METAL COVERS. (NEC 800-53a, 300-22)
3. ALL CABLES IN OPEN PLENUM CEILING SHALL BE RATED "OPEN PLENUM".

FIRE ALARM NOTE

1. FIRE ALARM SYSTEM IS COMPLETELY DESIGN BUILT. ELECTRICAL CONTRACTOR AND FIRE ALARM CONTRACTOR SHALL PREPARE FIRE ALARM DRAWINGS LOCATING ALL REQUIRED DEVICES, ROUTING OF CONDUIT INDICATING ALL WIRING, VOLTAGE DROP AND BATTERY CALCULATIONS ALL TO COMPLY WITH FIRE DEPARTMENT REQUIREMENTS AND SUBMIT TO FIRE DEPARTMENT FOR APPROVAL. THE APPROVED DRAWINGS SHALL BE USED BY ELECTRICAL CONTRACTOR TO INSTALL ALL BOXES, CONDUIT ETC AT NO ADDITIONAL COST TO OWNER.

GREEN BUILDING STANDARD NOTES

1. MINIMUM OF 50% OF NON HAZARDOUS CONSTRUCTION WASTE IS TO BE RECYCLE. CGC 5.713.8.1.
2. TESTING AND ADJUSTING OF NEW SYSTEMS SHALL COMPLY AS OUTLINED IN CGC SECTION 5.713.10.4.2.
3. OPERATIONS AND MAINTENANCE SCHEDULE (O&M) AS LISTED IN CGC SECTION 5.713.10.4.5 SHALL BE DELIVERED TO THE BUILDING OWNER OR REPRESENTATIVE AND THE FACILITIES OPERATOR.
4. DURING CONSTRUCTION, ENDS OF DUCT OPENING ARE TO BE SEALED, AND MECHANICAL EQUIPMENT IS TO BE COVERED. CGC 5.714.4.3.
5. VOC'S MUST COMPLY WITH THE LIMITATIONS LISTED IN SECTION 5.504.4 AND TABLES 4.504.1, 5.504.4.1, 5.504.4.2, 5.504.4.3 AND 5.504.4.5 FOR: ADHESIVES, SEALANTS, PAINTS, AND COATINGS, CARPET AND COMPOSITION WOOD PRODUCTS. CGC 5.714.4.4 .
6. ALL NONEMERGENCY INTERIOR LUMINAIRES SHALL BE TURNED OFF BETWEEN 11PM AND 5AM.

SEISMIC BRACING

ALL SUSPENDED UTILITY SYSTEMS WHICH INCLUDE:

ELECTRICAL, MECHANICAL, AND PLUMBING EQUIPMENT AND ASSOCIATED CONDUIT, DUCTWORK, AND PIPING ARE REQUIRED TO HAVE SEISMIC RESTRAINT ATTACHMENTS DESIGNED TO RESIST THE TOTAL DESIGN SEISMIC FORCES PRESCRIBED IN SECTION 1632.2. PROVIDE TYPICAL SEISMIC RESTRAINT DETAILS. DOCUMENTATION SUBSTANTIATING COMPLIANCE WITH SECTION 1632 OF THE 2000 UNIFORM BUILDING CODE(2013 CALIFORNIA BUILDING CODE) TO INCLUDE SEISMIC RESTRAINT ASSEMBLY DETAILS. ANCHORAGE TO OVERHEAD STRUCTURES WITH SUPPORTING ENGINEERING STAMP BY A LICENSED CIVIL OR STRUCTURAL ENGINEER IS REQUIRED AT TIME OF INSPECTION.

LIGHTING

- FLUORESCENT, INCANDESCENT, AND/OR HID LIGHTING FIXTURES COMPLETE WITH LAMPS. REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
- EXIT LIGHTS. REFER TO LIGHTING FIXTURE SCHEDULE FOR DETAILS. SURFACE MOUNT ON WALL OR CEILING AS INDICATED.
- L-1 / 1b — LIGHTING FIXTURE NOTATION A, 1, b INDICATES:
  L-1 = FIXTURE TYPE, REFER TO SCHEDULE
  1 = CIRCUIT NUMBER
  b = SWITCH CONTROLLING FIXTURE
  ab =BI-LEVEL/DUAL SWITCH CONTROL
- HALF SHADED FIXTURE FURNISHED WITH EMERGENCY BATTERY PACK BALLAST, UNSWITCHED CIRCUIT TO BATTERY CHARGER.
- $ab — 20 AMP, SINGLE POLE SWITCH. MOUNT AT 44" AFF TO CENTERLINE UNLESS NOTED OTHERWISE.
  SUBSCRIPTS:
  "ab" - NUMBER OF SWITCH CONTROL OR CHANNELS.
  "3" - 3-WAY SWITCH.
  "4" - 4-WAY SWITCH.
  "D" - DIMMER SWITCH.
  "M" - MOTOR-RATED TOGGLE SWITCH WITH OVERLOAD PROTECTION.
- S ab D — 20 AMP, DUAL TECHNOLOGY OCCUPANCY SENSOR, "D" DENOTES DIMMABLE WITH ON/OFF, RAISE/LOWER CONTROL, "ab" INDICATES NUMBER OF CHANNELS. MOUNT AT +44" AFF UNLESS NOTED OTHERWISE.
- D — LOW VOLTAGE, DIMMER SWITCH WITH ON/OFF, RAISE/LOWER CONTROL, "ab" INDICATES NUMBER OF CHANNELS. MOUNT AT +44" AFF UNLESS NOTED OTHERWISE.
- TC — TIME CLOCK.
- (S)(S) — CEILING OR WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, COMPLETE WITH POWER PACKS AND RELAYS AS NECESSARY.
- (P)(P) — CEILING OR WALL MOUNTED DUAL TECHNOLOGY PHOTOCELL WITH DIMMING, COMPLETE WITH POWER PACKS AND RELAYS AS NECESSARY.
- (PS)(PS) — CEILING OR WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR/PHOTOCELL WITH DIMMING, COMPLETE WITH POWER PACKS AND RELAYS AS NECESSARY.
- OS — OCCUPANCY SENSOR
- OR — 2 HR. PROGRAMMABLE LOW VOLTAGE OVERRIDE SWITCH.
- S — SWITCH
- WIFI — WIFI

POWER

- 480V - LIGHTING AND APPLIANCE PANELBOARD - FLUSH MOUNTED.
- 480V - LIGHTING AND APPLIANCE PANELBOARD - SURFACE MOUNTED.
- 208V - LIGHTING AND APPLIANCE PANELBOARD - FLUSH MOUNTED.
- 208V - LIGHTING AND APPLIANCE PANELBOARD - SURFACE MOUNTED.
- J J — JUNCTION BOX IN ACCESSIBLE CEILING SPACE OR FLUSH IN WALL WITH BLANK COVER PLATE TO MATCH DEVICE PLATES.
- 20 AMP, 125 VOLT, DUPLEX GROUNDING TYPE RECEPTACLE. MOUNT AT 18" AFF TO CENTERLINE UNLESS NOTED OTHERWISE.
- GFCI 20 AMP, 125 VOLT, DUPLEX GROUNDING TYPE RECEPTACLE.
- RECESS FLOOR MOUNTED DUPLEX RECEPTACLE, POKE THRU LEGRAND MODEL 6AT.
- SPECIAL PURPOSE OUTLET. REFER TO DRAWINGS FOR DESCRIPTION. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
- SPLIT WIRED 20 AMP, 125 VOLT, DUPLEX GROUNDING TYPE RECEPTACLE (UPPER HALF SWITCHED, LOWER HALF ENERGIZED CONTINUOUSLY). MOUNT 18" AFF UNLESS NOTED OTHERWISE.
- 20 AMP, 125 VOLT, QUADRUPLEX GROUNDING TYPE RECEPTACLES. MOUNT IN COMMON BOX WITH COMMON PLATE AT 18" AFF TO CENTERLINE UNLESS NOTED OTHERWISE.
- 20 AMP, 125 VOLT, DUPLEX TYPE RECEPTACLE. MOUNT ABOVE COUNTER, VERIFY MOUNTING HEIGHT. SHADED INDICATES SPLIT WIRED.
- QUAD GFI TYPE RECEPTACLES.
- GFCI RECEPTACLE ABOVE COUNTER
- 20 AMP, 125 VOLT, QUADRUPLEX GFI TYPE RECEPTACLES. MOUNT IN COMMON BOX WITH COMMON PLATE AT 18" AFF TO CENTERLINE UNLESS NOTED OTHERWISE.
- 20 AMP, 125 VOLT, QUADRUPLEX GROUNDING TYPE RECEPTACLES. POKE-THRU FLOOR MOUNTED IN COMMON BOX WITH COMMON PLATE.
- COMBINATION FLOOR OUTLET WITH DEVICES AS INDICATED
- A — COMBINATION AV/ POWER OUTLET
- 5 — MOTOR FURNISHED AND INSTALLED BY OTHERS, WIRED BY ELECTRICAL CONTRACTOR. CONNECT AS DIRECTED BY MOTOR SUPPLIER. NUMERAL INDICATES HORSEPOWER RATING "HP".
- F — 30/15/3 — DISCONNECT SWITCH "F" DENOTES FUSIBLE, HEAVY DUTY TYPE (UNLESS NOTED OTHERWISE ON DRAWINGS) COMPLETE WITH FUSETRONS SIZED TO PROTECT MOTOR, EQUIPMENT OR CONDUCTORS (WHICHEVER IS APPLICABLE). SIZE, POLES, AND TYPE AS INDICATED. HORSEPOWER RATED, QUICK-MAKE, QUICK-BREAK. DISCONNECT SWITCH AND SPECIFICATIONS FOR DETAILS. 30/15/3 REFERS TO FRAME/TRIP/POLE.
- 30/15/3 / 0 — COMBINATION MOTOR STARTER AND HEAVY DUTY DISCONNECT SWITCH. 30/15/3 REFERS TO FRAME/TRIP/POLE. '0' REFERS TO NEMA SIZE.
- 0 — MOTOR STARTER. '0' REFERS TO NEMA SIZE.
- T — POWER TRANSFORMER. SIZE AND TYPE NOTED ON PLANS. REFER TO SPECIFICATIONS FOR DETAILS.
- VAV — VARIABLE AIR VOLUME BOX (BY DIV 15).
- CFSD — COMBINATION FIRE SMOKE DAMPER BOX (BY DIV 15).
- MD — MOTORIZED DAMPER (BY DIV 15)
- POWER POLE.

SPECIAL SYSTEMS

- TELEPHONE MOUNTED BACKBOARD "TMB". 3/4 INCH SANDED AND PAINTED (FIRE PROOFED) CPX PLYWOOD, 4' X 8' UNLESS NOTED OTHERWISE.
- DATA 2 / TEL/DATA 3 / TEL 5 — TELEPHONE/DATA OUTLET DEVICE BOX. PROVIDE WITH 1" MINIMUM EMPTY CONDUIT WITH PULL STRING TO 4" ABOVE ACCESSIBLE CEILING. MOUNT AT 18" AFF TO CENTERLINE UNLESS NOTED OTHERWISE. TELEPHONE/DATA WIRING AND DEVICES BY OTHERS. "NUMERAL" ADJACENT INDICATES NUMBER OF TEL/DATA DROPS.
- TV — CABLE TELEVISION OUTLET. MOUNT AT 18" AFF TO CENTERLINE UNLESS NOTED OTHERWISE. VERIFY LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. USE 4-11/16" SQUARE BOX WITH SINGLE GANG PLASTER RING. PROVIDE BLANK COVERPLATE OVER ALL UNUSED OUTLETS. (SUBSCRIPT CCTV INDICATES CLOSED-CIRCUIT T.V. OUTLET)
- SPEAKER S / VOLUME V — VOLUME CONTROL AND CEILING RECESS SPEAKER. CONTRACTOR TO INSTALL J-BOX WITH 3 /4"C EXTENDED TO THE CEILING SPACE. SPEAKERS TO BE RADIO SHACK 8" DIA. MODEL 40-1366. INCLUDE WIRING FROM EACH VOLUME CONTROL TO THE SPEAKERS.
- WAP — WIRELESS ACCESS POINT.
- SECURITY SENSOR
- (D) — EXISTING TO BE REMAIN
- (E) — DEMOLITION
- (R) — RELOCATED

CONDUIT

- RACEWAY AND CONDUCTORS CONCEALED ABOVE CEILING OR IN WALL AT ELECTRICAL CONTRACTOR'S OPTION. #12 AWG MINIMUM SIZE CONDUCTOR UNLESS NOTED OTHERWISE.
- CONDUIT BELOW FLOOR OR UNDERGROUND. DEPTH OF UNDERGROUND CONDUITS SHALL BE PER CEC.
- EX — EXISTING CONDUIT OR BRANCH CIRCUIT TO REMAIN.
- RACEWAY DOWN. #12 AWG MINIMUM SIZE CONDUCTOR UNLESS NOTED OTHERWISE.
- RACEWAY UP. #12 AWG MINIMUM SIZE CONDUCTOR UNLESS NOTED OTHERWISE.
- CONCEALED BRANCH CIRCUIT HOMERUN. FOR NORMAL BRANCH CIRCUIT WIRING CONTRACTOR MAY COMBINE UP TO THREE CIRCUITS IN ONE RACEWAY.
- INDICATES CIRCUIT CONTINUATION.
- CONDUIT STUB OUT, CAP END OF CONDUIT.
- CONDUIT SLEEVE.

FIRE ALARM (NOT USED)

- D — PHOTOELECTRIC SMOKE DETECTOR, DUCT TYPE COMPLETE WITH PROBE, FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR, INSTALLED AND CONTROL WIRING BY MECHANICAL CONTRACTOR.
- FSD J — JUNCTION BOX FOR SMOKE/FIRE DAMPER BY OTHERS. PROVIDE 120V POWER TO JUNCTION BOX AND PROVIDE PHOTOELECTRIC, DUCT TYPE SMOKE DETECTOR ON SUPPLY SIDE OF DAMPER. CONNECT DUCT-TYPE SMOKE DETECTOR TO FIRE ALARM SYSTEM FOR MONITORING ONLY. VERIFY EXACT LOCATIONS OF SMOKE/FIRE DAMPER AND COORDINATE WIRING REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
- RTS — REMOTE TEST/STATUS STATION FOR DUCT SMOKE DETECTOR. FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. LOCATE BELOW UNIT, ABOVE FALSE CEILING.
- F — MANUAL FIRE ALARM PULL STATION. REFER TO SPECIFICATIONS FOR DETAILS. MOUNT AT 44" AFF TO CENTERLINE UNLESS NOTED OTHERWISE.
- H 100cd — WALL MOUNTED HORN STROBE LIGHT. REFER TO SPECIFICATIONS FOR DETAILS. MOUNT AT 80" AFF TO CENTERLINE UNLESS NOTED OTHERWISE. NUMBER INDICATES CANDELA RATING.
- L 100cd — WALL MOUNTED FIRE ALARM VISUAL ONLY SIGNAL. REFER TO SPECIFICATIONS FOR DETAILS. MOUNT AT 80" AFF TO CENTERLINE UNLESS NOTED OTHERWISE. NUMBER INDICATES CANDELA RATING.
- S — FIRE ALARM SMOKE DETECTOR, PHOTOELECTRIC TYPE UNLESS NOTED OTHERWISE. CEILING MOUNTED, REFER TO SPECIFICATIONS FOR DETAILS.
- H — HEAT DETECTOR, CEILING MOUNTED. REFER TO SPECIFICATIONS FOR DETAILS.
- SPRINKLER SYSTEM FLOW SWITCH FURNISHED AND INSTALLED BY FIRE PROTECTION CONTRACTOR, CONNECTED TO FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR. PROVIDE ZONE ADDRESSABLE (MONITOR) MODULE AS REQUIRED FOR CONNECTION TO FIRE ALARM SYSTEM. VERIFY EXACT LOCATION WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
- SPRINKLER SYSTEM TAMPER SWITCH FURNISHED AND INSTALLED BY FIRE PROTECTION CONTRACTOR, CONNECTED TO FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR. PROVIDE ZONE ADDRESSABLE (MONITOR) MODULE AS REQUIRED FOR CONNECTION TO FIRE ALARM SYSTEM. VERIFY EXACT LOCATION WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
- FACP — FIRE ALARM SYSTEM CONTROL PANEL. REFER TO SPECIFICATIONS FOR DETAILS.
- FAP — FIRE ALARM SYSTEM REMOTE ANNUNCIATOR PANEL. REFER TO SPECIFICATIONS FOR DETAILS.
- NACPS — NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY.
- FATC — FIRE ALARM TERMINAL CABINET.
- MAGNETIC DOOR HOLDER FURNISHED BY GENERAL CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. PROVIDE ZONE ADDRESSABLE (CONTROL) MODULE AS REQUIRED TO CONNECT TO FIRE ALARM SYSTEM. VERIFY EXACT LOCATION AND MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO ROUGH-IN.
- SD — FIRE ALARM (CEILING MOUNTED) SMOKE DETECTOR
- F — FA PULL STATION (WALL MOUNTED)
- FIR ALARM HORN STROBE (CEILING MOUNTED)

WIRING

- CONDUIT ROUTED UNDERFLOOR / UNDERGROUND
- RACEWAY W/#12 CONDUCTORS UNO
- RACEWAY TURNED UP
- RACEWAY TURNED DOWN
- HOMERUN TO PANELBOARD 1/2"C W/3#12 CONDUCTORS UNO
- CONDUIT CAP-OFF

MISCELLANEOUS

- UNIT / # — EQUIPMENT TAG
- # / SHEET — DIAGRAM TAG
- 1 — REVISION SYMBOL
- 1 — KEYNOTE SYMBOL
- XX — SCHEDULED EQUIPMENT

ELECTRICAL SHEET INDEX

APPLICABLE CODES

- 2016 CALIFORNIA ADMINISTRATIVE CODE (CAC) PART 1, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- 2016 CALIFORNIA BUILDING CODE (CBC) PART 2, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- 2016 CALIFORNIA ELECTRICAL CODE (CEC) PART 3, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- 2016 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- 2016 CALIFORNIA PLUMBING CODE (CPC) PART 5, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- 2016 CALIFORNIA ENERGY CODE (CEC) PART 6, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- 2016 CALIFORNIA FIRE CODE (CFC) PART 9, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)
- 2016 CALIFORNIA GREEN BUILDING CODE (CGBC) PART 11, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR)

ABBREVIATIONS

- A -
A AMPERE
AFF ABOVE FINISHED FLOOR
AF ARC FAULT,
AMP FUSE
AFG ABOVE FINISHED GRADE
AIC AMPERE INTERRUPTING CAPACITY AL ALUMINUM
ARCHL ARCHITECTURAL AS AMP SWITCH
AWG AMERICAN WIRE GAUGE

- B -
BC BARE COPPER
BLDG BUILDING BLDG

- C -
C CONDUIT
CAB CABINET
CAT CATALOG/CATEGORY
C/B CIRCUIT BREAKER
CKT CIRCUIT
CLG CEILING
CO. CONDUIT ONLY
CC COMM COMMUNICATION
CU COPPER

- D -
DEMO DEMOLITION/DEMOLISH
DISC. DISCONNECT
DN DOWN
DWG DRAWING
(D) DEMOLITION

- E -
EA EACH
ELEC ELECTRICAL
ELEV ELEVATOR
EM EMERGENCY
EMT ELECTRICAL METALLIC TUBING
EQUIP EQUIPMENT
(E) EXISTING TO REMAIN

- F -
FBO FURNISHED BY OTHERS
FF FINISHED FLOOR
FIXT FIXTURE
FLEX FLEXIBLE METALLIC CONDUIT(STEEL)
FLOR FLUORESCENT
FT FEET OR FOOT

- G -
GFA GROUND FAULT ALARM
GFCI GROUND FAULT CIRCUIT INTERRUPTER
GND GROUND

- H -
HP HORSEPOWER
HVAC HEATING, VENTILATING & AIR CONDITIONING

- I -
IBC INTERNATIONAL BUILDING CODE
IMC INTERMEDIATE METAL CONDUIT
IN INCH(ES)
IRC INTERNATIONAL RESIDENTIAL CODE
ISC SHORT CIRCUIT AMPERES

- J -
JB, J-BOX JUNCTION BOX

- K -
KCMIL, MCM THOUSAND CIRCULAR MILS
KVA KILOVOLT AMPERE
KW KILOWATT

- L -
LTG LIGHTING

- M -
MAX. MAXIMUM
MCB MAIN CIRCUIT BREAKER
MECH. MECHANICAL
MIN. MINIMUM
MLO MAIN LUGS ONLY
MTD MOUNTED

- N -
NC NORMALLY CLOSED
NEC NATIONAL ELECTRICAL CODE
NECA NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION
NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NEUT NEUTRAL
NFC NATIONAL FIRE CODE
NF NON-FUSIBLE
NIC NOT IN CONTRACT
NL NIGHT LIGHT
NO NORMALLY OPEN
NPCO NEVADA POWER COMPANY
NTS NOT TO SCALE
(N) NEW

- O -
OCP OVERCURRENT PROTECTION

- P -
P POLE
PH PHASE
PNL PANEL
PV PV PHOTOVOLTAIC
PVC POLYVINYL CHLORIDE
PWR POWER

- Q -
QTY QUANTITY

- R -
RECEP RECEPTACLE
REQ'D REQUIRED
RSC RIGID STEEL CONDUIT
(R) RELOCATED

- S -
SCHED SCHEDULE
SECT SECTION
SP SINGLE POLE
SN SOLID NEUTRAL
SPEC SPECIFICATION
SW SWITCH
SWBD SWITCHBOARD
SWGR SWITCH GEAR
SYS SYSTEM

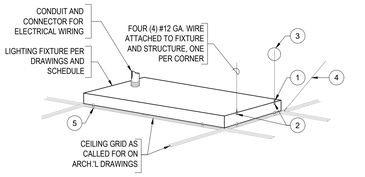
- T -
TEMP TEMPORARY
TELE TELEPHONE
T-STAT THERMOSTAT
TTB TELEPHONE TERMINAL BACKBOARD
TTB TELEPHONE TERMINAL CABINET
TYP. TYPICAL

- U -
UBC UNIFORM BUILDING CODE
UL UNDERWRITERS LABORATORY
U.N.O. UNLESS NOTED OTHERWISE

- V -
V VOLT OR VOLTAGE
VA VOLT AMPERE
VD VOLTAGE DROP
VP VAPOR PROOF

- W -
W WATT, WIRE
WCR WITHSTAND CURRENT RATING UL LISTED
WP WEATHERPROOF, NEMA 3R

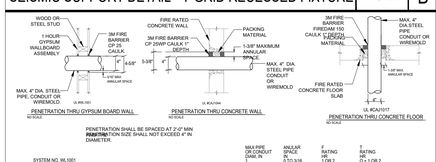
- X -
XFMR TRANSFORMER



KEY NOTES:

1. ATTACH WIRE TO FIXTURE (3 TIGHT TURNS MIN. IN 1 1/2" MAX.).
2. "TEK" SCREW GRID TO FIXTURE @ EACH CORNER.
3. ATTACH HANGER WIRES TO STRUCTURE AS PER STRUCTURAL & ARCHITECTURAL DETAILS.
4. CEILING SYSTEM SPLAY/HANGER WIRES AS OCCURS, SEE PLANS.
5. TROFFER CLAMP.

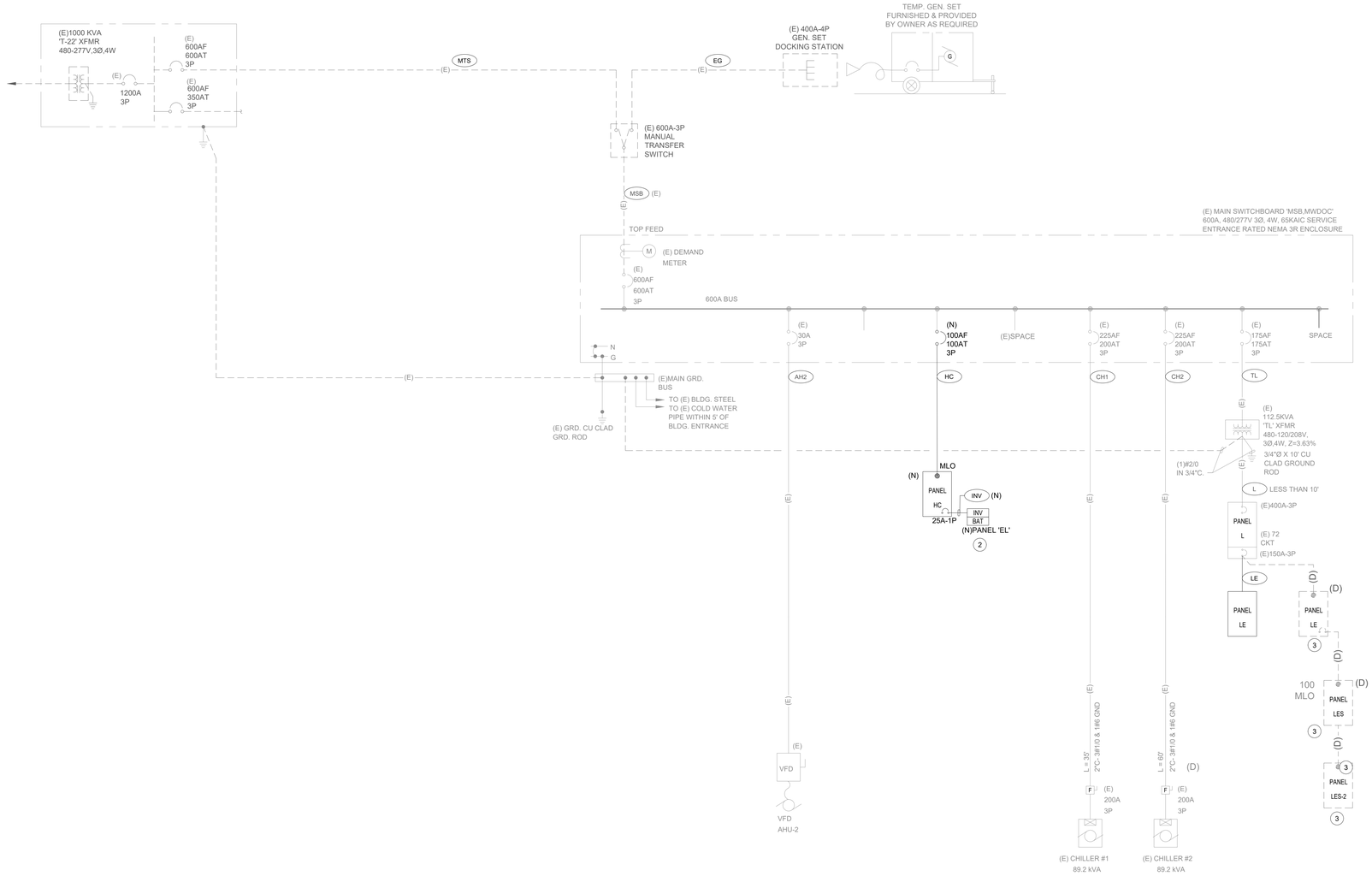
SEISMIC SUPPORT DETAIL - T-GRID RECESSED FIXTURE | NONE | B



PENETRATION SHALL BE SPACED AT 2'-0" MIN PENETRATION SIZE SHALL NOT EXCEED 4" IN DIAMETER.

SYSTEM NO. WL1001
CONTROLLED SYSTEM NO. HTI
F RATINGS - 1-2-3, AND 4 HR (SEE ITEMS 2 AND 3)
T RATINGS - 0-1-2-3, AND 4 HR (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM/SQ FT (SEE ITEM 3)
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT (SEE ITEM 3)

MAX PIPE OR CONDUIT DIAM. IN	ANNULAR SPACE IN	F RATING HR	T RATING HR
4	0 TO 3/16	1 OR 2



GENERAL NOTES

1. THE DESIGN PROFESSIONAL HAS PERFORMED REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATING INDICATED FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.
2. THE DESIGN PROFESSIONAL HAS PERFORMED REQUIRED VOLTAGE DROP CALCULATIONS AND BRANCH CIRCUITS AND FEEDERS COMPLY WITH NEC 210-19(A) FPN NO. 4.
3. FAULT CURRENT CALCULATIONS ASSUME UTILITY PROVIDED ____KVA UTILITY TRANSFORMER WITH ____ A OF AVAILABLE FAULT CURRENT LOCATED __ FEET FROM MAIN SWITCHBOARD. REFER TO POWER UTILITY DRAWINGS FOR EXACT SIZE AND LOCATION. NOTIFY ENGINEER IN WRITING IF TRANSFORMER SIZE IS INCREASED OR DISTANCE IS DECREASED.
4. GROUND FAULT RELAY SETTINGS:
   A. TO MINIMIZE NUISANCE TRIPPING OF THE MAIN AND FEEDER BREAKER, THE CONTRACTOR SHALL ADJUST THE GROUND FAULT RELAY SETTINGS FOR THE GFP DEVICES TO BE HIGHER THAN DOWNSTREAM GFP AND NON-GFP DEVICES. THE GROUND FAULT CURRENT PICK-UP AND TIME DELAY SETTINGS SHALL BE ADJUSTED, PER THE MANUFACTURERS RECOMMENDATIONS, RESULTING FROM A CONTRACTOR /MANUFACTURER PREPARED COORDINATION STUDY - WHICH SHALL BE DOCUMENTED IN THE SHOP DRAWING SUBMITTAL.
   B. DURING THE CONSTRUCTION PHASE OF THE PROJECT, GROUND FAULT RELAYS SHALL BE SET AT THE SHORTEST AVAILABLE TIME DELAY.
   C. AFTER SETTINGS HAVE BEEN ADJUSTED, THE CONTRACTOR SHALL HAVE THE GROUND FAULT SYSTEM TESTED BY AN INDEPENDENT TESTING AGENCY PER NEC 230-95 (C). THIS TEST SHALL BE PERFORMED IN THE PRESENCE OF THE LOCAL AUTHORITY HAVING JURISDICTION AND THE TEST RESULTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD.

KEY NOTES

1. EXISTING INFORMATION IS BASED ON AS-BUILT CONDITIONS VERIFIED MAY 2020.
2. 3.75KW CENTRAL LIGHTING BATTERY INVERTER, 277V INPUT/OUTPUT OPERATION, 90" BATTERY OPERATION, SUITABLE FOR LED & H.I.D. LIGHT FIXTURES. 10KAIC RATED. EQUIP WITH (6) 20A-1P CIRCUIT BREAKERS. MEYERS #CM SERIES OR EQUAL. SEE DETAIL 1, SHEET E-003.
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING LOADS, DISCONNECT FROM EXISTING PANEL, INTERCEPT CIRCUITS IN A NEW WIREWAY ABOVE CEILING AND EXTEND TO UPGRADED PANELS. UPDATE PANEL DIRECTORIES FOR ALL RELOCATED CIRCUITS.

MOTOR SHORT CIRCUIT CONTRIBUTION

MOTOR		VOLTS	PH	HP	FLA	FLAx4
(E) CHILLER NO. 1		480	3		107	429
(E) CHILLER NO.2		480	3		107	429
(E) AHU-2		480	3		22	88
		480	3			0
		480	3			0
		480	3			0
		480	3			0
		480	3			0
		480	3			0
		480	3			0
		480	3			0
		480	3			0
		480	3			0
TOTAL						946

DISTRIBUTION BOARD 'MSB-MWDOC' - 'FEEDER SCHEDULE AND LOAD CALCULATIONS

LOAD							FEEDERS								VOLTAGE DROP CALCULATIONS				AFC CALCULATIONS		
NAME	PF	VOLTS	Ø	CONNECTED HP	CONNECTED KVA	DEMAND KVA	DEMAND AMPS	#	CONDUITS #	CONDUITS SIZE	WIRE PER CONDUIT #	WIRE PER CONDUIT SIZE	GND.PER CONDUIT SIZE	EST. DIST.	REMARKS	FEEDER SEGMENT DROP ONLY VOLTS DROP	FEEDER SEGMENT DROP ONLY %	NET DROP AT DEVICE VOLTS DROP	NET DROP AT DEVICE %	AFC FROM SOURCE	MOTOR CONTRI-BUTION	NET AFC AT DEVICE
(E) GEN SET DOCK STATION	0.80	480	3					EG	1	4"	3	600kcmil	#3	80								
(E) MTS (FED FROM "T-22"	1.00	480	3		375	309	371	MTS	2	4"	3	350kcmil	#1	300	EXISTING CONDITIONS	5.79	1.2%	5.79	1.2%	21,900		21,900
(E) SWBD. "MSB-MWDOC"	1.00	480	3		SAME	SAME		MSB	2	4"	3	350kcmil	#1	20	EXISTING CONDITIONS	0.31	0.1%	6.10	1.3%	21,900	946	22,002
(E) CHILLER NO. 1	1.00	480	3		89.2	89.2	107	CH1	1	4"	3	3/0	#6	80	INTERCEPTED FDR	1.40	0.3%	7.50	1.6%	22,002		14,722
(E) CHILLER NO.2	1.00	480	3		89.2	89.2	107	CH2	1	4"	3	3/0	#6	80	INTERCEPTED FDR	1.40	0.3%	7.50	1.6%	22,002		14,722
(E) AHU-2	1.00	480	3		20.0	20.0	24	AH2	1	4"	3	#10	#10	40	INTERCEPTED FDR	1.83	0.4%	7.93	1.7%	22,002		5,193
(D) PANEL 'HC	1.00	480	3												DISC. / REMOVE							
(D) XFMR "TB"		480	3												DISC. / REMOVE							
(D) PANEL 'LE'		208	3												DISC. / REMOVE							
(D PANEL 'LES'		208	3												DISC. / REMOVE							
(D) PANEL 'LES-2'		208	3												DISC. / REMOVE							
(N) PANEL 'HC'	1.00	480	3		60	50	61	H	1	(E)2"	4	#1	#8	40	EMT / COPPER	0.67	0.1%	6.77	1.4%	22,002		15,327
(N) INVERTER	1.00	277	1		3.75	4	14	H	1	3/4"	2	#12	#10	5	EMT / COPPER	0.20	0.1%	6.97	2.5%	15,327		8,080
(E) TRANSFORMER "T-L"		480	3		112.5			TL	1	2"	3	2/0	#6	10	EMT / COPPER	0.00	0.0%	0.00	0.0%	21,900		20,401
(E) PANEL 'L'		208	3			56	156	L	2	2"	4	3/0	#3	23	EMT / COPPER	0.29	0.1%	0.29	0.1%	20,401		6,899
(N) PANEL 'LE'		208	3			20	25	LE	1	2"	4	1/0	#6	20	EMT / COPPER	0.11	0.1%	0.40	0.2%	6,899		6,112

CLIENT

MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

STAMP

ISSUE

REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO. 18X093.00
PRINT DATE
DRAWN BY
CHECKED BY

SHEET TITLE

SINGLE LINE DIAGRAM

SHEET NUMBER

E-002

SHEET NO. OF

PANELBOARD '(N) LE'

MAIN: 208/120VOLT,3-PH,4-WIRE & GND | FEED TYPE: TOP | MAIN BREAKER: MLO | MOUNTING: FLUSH
BUS: 1 SEC.: SINGLE LUGS | ENCL.: NEMA 1 | BUS: 225 AMP | MIN A.I.C. RATING: 10K

LOAD VA	LOAD DESCRIPTION	OUTLETS M	R	L	CB / P	CKT #	PHASE	CKT #	CB / P	OUTLETS L	R	M	LOAD DESCRIPTION	LOAD VA
360	(E) RECEPT WIFI			0	20/1	1	A	2	20/1	0			RECEPT CUBICALS 113	1920
1200	(E)LOAD			0	20/1	3	B	4	20/1	0			RECEPT CUBICALS 113	1920
500	(E)LOAD			0	20/1	5	C	6	20/1	0			RECEPT CUBICALS 113, 103	1920
500	(E)LOAD			0	20/1	7	A	8	20/1	0			RECEPT CONF RM 101	720
500	(E)LOAD			0	20/1	9	B	10	20/1	0			RECEPT CONF RM 101	720
500	SPARE			0	20/1	11	C	12	20/1	0			RECEPT CONF RM 101	720
500	(E) RECEPT GB UNDER CAB LTS.			0	20/1	13	A	14	20/1	0			RECEPT CONF RM 101	720
500	(E) RECEPT KITCHEN			0	20/1	15	B	16	20/1	0			ADA MOTORIZED DOOR EQUIPT. LOBBY	468
500	(E) RECEPT KITCHEN			0	20/1	17	C	18	20/1	0			ADA MOTORIZED DOOR EQUIPT. LOBBY	468
	SPARE			0	20/1	19	A	20	20/1	0			ADA MOTORIZED DOOR EQUIPT. LOBBY	468
	SPARE			0	20/1	21	B	22	20/1	0			KITCHEN FRIDGE RECEPT	500
	SPARE			0	20/1	23	C	24	20/1	0			SPARE	
	SPARE			0	20/1	25	A	26	20/1	0			SPARE	
500	(E) RECEPT OFFICE 136, 137			0	20/1	27	B	28	20/1	0			SPARE	
500	(E) RECEPT OFFICE 105, 135, 136, 137			0	20/1	29	C	30	20/1	0			SPARE	
	SPARE			0	20/1	31	A	32	20/1	0			RECEPT CUBICALS 140	500
	SPARE			0	20/1	33	B	34	20/1	0			RECEPT CUBICALS 140	500
500	(E) RECEPT CONFERENCE TV			0	20/1	35	C	36	20/1	0			RECEPT CUBICALS 140	500
500	(E) RECEPT CONFERENCE TV			0	20/1	37	A	38	20/1	0			SPARE	
500	(E) RECEPT OFFICE 127 PRINTER			0	20/1	39	B	40	20/1	0			SPARE	
	SPACE			0		41	C	42		0			SPACE	

PHASE	A	B	C		PANEL TOTAL	
PHASE TOTAL CONNECTED VA:	6188	7308	6108		19.6	KVA
CONTINUOUS LOAD @125%: (0)	0	0	0		0.0	KVA
KITCHEN EQUIP. @ 65% (0)	0	0	0		0.0	KVA
LARGEST MOTOR @125%: (0)	0	0	0		0.0	KVA
HVAC @ 100% (0)	0	0	0		0.0	KVA
GEN. RECEPT. DEMAND (0)	0	0	0		0.0	KVA
REMAINING @100%	6188	7308	6108		19.6	KVA
PANEL TOTAL W/ DEMAND:	6188	7308	6108		19.6	KVA
FULL LOAD AMPS:	52	61	51		54.4	AMPS

PANEL LOCATION: ELEC. ROOM
FED BY: PANEL 'L'

100.0% (NET GEN. REC. DEMAND FACTOR)

(E) PANELBOARD 'L'

MAIN: 208/120VOLT,3-PH,4-WIRE & GND | FEED TYPE: BOTTOM | MAIN BREAKER: 400A-3P | MOUNTING: SURFACE
BUS: 1 SEC.: SINGLE LUGS | ENCL.: NEMA 1 | BUS: 400A | MIN. AIC RATING: 10K

LOAD VA	LOAD DESCRIPTION	OUTLETS M	R	L	CB / P	CKT #	PHASE	CKT #	CB / P	OUTLETS L	R	M	LOAD DESCRIPTION	LOAD VA
1920	(E) RECEPT - CONF RM 102 & ADMIN 1(				20/1	1	A	2						
1920	(E) RECEPT - CONF RM 102 & ADMIN 1(				20/1	3	B	4	30/3			1	(E) AC UNIT	2000
1920	(E) RECEPT - CONF RM 102				20/1	5	C	6						2000
900	(E) RECEPT - OUTSIDE				20/1	7	A	8	20/1				(E) RECEPT - ROOF	180
900	(E) RECEPT				20/1	9	B	10						2000
1080	(E) RECEPT - OFFICE 126. 128. 129				20/1	11	C	12	30/3			1	(E) FAU	2000
540	(E) RECEPT - 122. 124				20/1	13	A	14						2000
600	(E) PATIO LIGHTS				20/1	15	B	16	20/1				SPARE	
180	(E) WATER HEATER				20/1	17	C	18	20/1				(E) RECEPT KITCHEN	1920
540	(E) RECEPT COPY RM				20/1	19	A	20	20/1				SPARE	
1920	(E) RECEPT COPY RM				20/1	21	B	22	20/1				(E) RECEPT 123 RM EC	900
1920	(E) RECEPT - OFFICE 114, 115				20/1	23	C	24	20/1				(E) RECEPT WIFI	1920
	SPARE				20/1	25	A	26	20/1				SPARE	
900	(E) RECEPT OFFICE 114, 116				20/1	27	B	28	20/1				(E) RECEPT KITCHEN	504
1920	(E) RECEPT OFFICE 115, 116, 117				20/1	29	C	30	20/1				SPARE	
1920	(E) RECEPT HALLWAY 100				20/1	31	A	32	20/1				(E) RECEPT KITCHEN	1080
360	RECEPT - CONF RM 101				20/1	33	B	34	20/1				(E) RECEPT VANITY LTS	504
720	(E) RECEPT - OFFICE 106, 107, 108				20/1	35	C	36	20/1				RECEPT DRINKING FOUNTAIN EWC	504
360	(E) RECEPT IT RM				20/1	37	A	38	20/1				RECEPT OFFICE 137, 139, 140	504
360	(E) RECEPT IT RM				20/1	39	B	40	20/1				(E) RECEPT RR	900
1920	(E) LOAD OFFICE 124, 125				20/1	41	C	42	20/1				(E) RECEPT IT RM	1920
720	RECEPT - OPEN OFFICE RM 127				20/1	43	A	44	20/1				(E) RECEPT 121, 123,, 125	540
540	RECEPT - OPEN OFFICE RM 127				20/1	45	B	46	20/1				(E) RECEPT 118, 119, 120, 121, 122	540
540	RECEPT - OPEN OFFICE RM 127				20/1	47	C	48	20/1				(E) RECEPT 118, 119, 120, 121, 122	540
360	RECEPT - OPEN OFFICE RM 127				20/1	49	A	50	20/1				(E) RECEPT 126. HALLWAY	540
	SPARE				20/1	51	B	52	20/1				RECEPT COPY RM	1100
	SPARE				20/1	53	C	54	20/1				RECEPT COPY RM	360
	SPARE				20/1	55	A	56	20/1				SPARE	
	SPARE				20/1	57	B	58	20/1				SPARE	
	SPARE				20/1	59	C	60	20/1				(E) RECEPT. - HVAC CONTROLS	360
720	(E) RECEPT COPY RM				20/1	61	A	62	20/1				(E) RECEPT. - HVAC CONTROLS	360
720	(E) RECEPT COPY RM				20/1	63	B	64	20/1				SPARE	
1920	(E) RECEPT COPY RM				20/1	65	C	66	20/1				SPARE	
	SPARE				20/1	67	A	68	20/1				(E) LIGHTS - CHILLER PIT	600
	SPARE				20/1	69	B	70	20/1				SPARE	
	SPARE				20/1	71	C	72	20/1				SPARE	
							A							6188
							B		(E)150/3				(N)PANEL 'LE'	7308
							C							6108

PHASE	A	B	C		PANEL TOTAL	
PHASE TOTAL CONNECTED VA:	15784	16668	23644		56.1	KVA
CONTINUOUS LOAD @125%: (5040)	3150	750	2400		6.3	KVA
KITCHEN EQUIP. @ 65% (0)	0	0	0		0.0	KVA
LARGEST MOTOR @125%: (0)	0	0	0		0.0	KVA
HVAC @ 100% (0)	0	0	0		0.0	KVA
GEN. RECEPT. DEMAND (0)	0	0	0		0.0	KVA
PANEL TOTAL W/ DEMAND:	18934	17418	26044		62.4	KVA
FULL LOAD AMPS:	158	145	217		173.2	AMPS

PANEL LOCATION: WORKROOM
FED BY: MSB-MWDOC VIA TLE

CONTRACTOR SHALL UPDATE DIRECTORY BASED
FIELD VERIFICATION OF ALL EXISTING CONDITIONS
LOADS RELOCATED FROM (E) PANELS LE, LES, LE

100.0% (NET GEN. REC. DEMAND FACTOR)

ORDERING GUIDE

Example Model Number
1-EH-4-S-BA2007-F-T-S-M-R-2YW

6	EH	4	S	90	B D 20 6	M	2YM

SYSTEM TYPE
EH - Illuminator Series "E-H"
IEH - Illuminator Series "IE-H"

VOLTAGE (INPUT/OUTPUT)[1]
1 - 120-120
2 - 120-120/277
3 - 208-120/240
5 - 277-120
6 - 277-277
7 - 277-277/120
8 - 208-120/240
A - 208-120/208
Z - Other Voltages

KVA/KW[2]
1 - 1.5
2 - 2.25
3 - 3.0
4 - 3.75
5 - 5.0
6 - 6.0
7 - 8.0
8 - 10.0
9 - 12.5
10 - 16.7

BATTERY TYPE
S-Standard (VRLA)

RUNTIME[3]
(90 minutes)

OUTPUT BREAKERS[5]
Example: B A 20 07

OUTPUT
B-Normally On
N-Normally Off[6]

VOLTAGE
A-120
B-208
C-240
D-277
Z-Other

AMP RATING
10, 15, 20, 25, 30, 40, 50, 60

QUANTITY
01 - 24[7]
(List all circuit breaker requirements separately, ex: BA2007 - NA1001)

WARRANTY[4]
2YW - Factory Start-Up Extended 2-Year Electronics Warranty
5YP - 5-Year Preventative Maintenance Plan, Start-Up Included
5YW - 5-Year Electronics Warranty (includes start-up)
SMP[8] - Service Monitoring Plan

OPTIONS
A - Remote Summary Alarm Panel
E - E-Mail Modem
F - Fast Charge
I - Inverter On Dry Contacts
M - Maintenance Bypass[9]
N - Normally Off Output(Std. on IE)[7]
R - Remote Meter Panel
S - Summary Fault Form C Contacts
T - Output Trip[9] (Supervised) Alarm
V - Time Delay 15 min. (for normally off circuits only)[7]

1) Only single phase voltages available.
2) KVA = KW
3) Standard battery run time is 90 minutes.
4) Normally off loads on Series E-H cannot exceed 20% of total KVA rating with any combination of H.I.D. Loads. Contact factory for clarification.
5) Maximum output breakers available: 12 unsupervised (1-pole), or 8 supervised (1-pole) for 1.5 - 5 kVA, (additional Circuit Breaker Options available, consult factory), and 24 unsupervised (1-pole), or 15 supervised (1-pole) for 6 - 16.7 kVA. Breakers provided are 20 Amps unless specified otherwise. A 2-pole breaker occupies 2 positions.
6) Maintenance bypass switch is a "make before break".
7) Standard one year full warranty.
8) Requires Factory Start-up and E-mail/Modem options. This program will provide monitoring of the lighting inverter system by our factory service department. All monthly and yearly system tests will be reviewed by our factory service department for early warning signs of any system malfunction. Any system alarms and monthly/yearly test results will automatically be E-mailed to our service department where corrective action can be taken and resolved in a timely manner. If necessary, our factory authorized service technician will be scheduled to complete any necessary repairs. This monitoring program will require a dedicated analog telephone line.
9) 15 minute retransfer time delay of normally off circuit after return of utility.

ELECTRONICS MODULE / BATTERIES (90 minutes @ full load)

Power Rating (kVA)	Power Rating (kW)	Efficiency (@ full load)	Audible Noise (dBA @ 1m)	Heat Loss (BTU)/HR	Cabinet Dimensions Width inch/m	Height inch/m	Depth inch/m	Weight lbs/kg	90 Minute Batteries lbs/kg	Number of Batteries	Voltage (VDC)	Current (Amperes)	Total System Weight lbs/kg
1.5	1.5	98	45	102	30/77	47/119	25/64	215/98	296/135	4	48	39	511/230
2.25	2.25	98	45	153	30/77	47/119	25/64	230/105	444/200	6	72	38	674/306
3.0	3.0	98	45	204	30/77	47/119	25/64	235/107	592/266	8	96	38	827/372
3.75	3.75	98	45	255	30/77	47/119	25/64	240/109	740/330	10	120	37	980/441
5.0	5.0	98	45	340	30/77	47/119	25/64	280/128	888/400	12	144	41	1168/525
6.0	6.0	98	45	408	53/122	76/193	25/64	605/272	1110/500	15	180	40	1715/772
8.0	8.0	98	45	544	53/122	76/193	25/64	640/288	1480/666	20	240	39	2120/954
10.0	10.0	98	45	680	53/122	76/193	25/64	795/353	1776/800	24	144	82	2561/1153
12.5	12.5	98	45	850	53/122	76/193	25/64	805/362	2220/999	30	180	82	3025/1361
16.7	16.7	98	45	1135	53/122	76/193	25/64	885/398	2960/1332	40	240	80	3845/1730

ILLUMINATOR E/IE-H SINGLE PHASE

(See chart on page 3 for dimensional details)

OPTIONS AVAILABLE

E-MAIL/MODEM
User can enable/disable and program alarms that will trigger messages to e-mail destinations. User can set up specific alarm events that will alert service or maintenance personnel. The system will transmit monthly and yearly tests per NFPA requirements. Bi-directional communication eases system diagnostics and data retrieval through the RS-232 serial communication port.

TIME DELAY
Delays retransfer of inverter to continue supplying emergency power to the normally off output for 15 minutes after the return of utility power.

OUTPUT CIRCUIT BREAKER
Maximum output breakers available: 12 unsupervised (1-pole) or 8 supervised (1-pole) for 1.5 - 5 kVA, and 24 unsupervised (1-pole) or 15 supervised (1-pole) for 6 - 16.7 kVA. Additional output or breakers available on 1.5 - 5kVA systems (additional 30 pole positions for 42 positions total; enclosure height increases to 62").

OUTPUT TRIP ALARM
An audible and visual alarm activates when an output distribution circuit breaker is open or has tripped.

MAINTENANCE BYPASS
This device is internally mounted in the system and permits maintenance personnel to easily bypass the inverter and connect directly to the AC utility power. The "make before break" switch isolates the electronics or inverter system to allow performance of routine maintenance or servicing.

REMOTE SUMMARY ALARM PANEL
A wall mountable box containing an audible alarm and light that will activate upon any system alarm with silence switch.

SUMMARY FORM C CONTACT
Form "C" contacts rated at 5 amps maximum at 250VAC/30VDC. Dry contact will change state when any system alarm activates. Contacts change state with the following alarms: High/low battery charger fault, near low battery, low battery, load reduction fault, output overload, high/low AC input volts, high ambient temperature, inverter fault, test failure, and optional circuit breaker trip alarm.

INVERTER ON FORM C CONTACT
Form "C" dry contact that will change state when the inverter transfers to battery operation.

STATUS MONITORING CONTACTS
Multiple Form "C" dry contacts capable of monitoring system and option statuses (Inverter On, Inverter Off, AC Present, High Temperature, Summary Alarm, System Bypass*, and OTA*)
*Requires purchase of Maintenance Bypass and/or Output Trip Alarm options.

FAST CHARGE
This is a battery charger upgrade which decreases the time to recharge a fully discharged battery bank to a full charge. The recharge time is decreased from the standard 24-hour period to a 12-hour period.

NORMALLY OFF OUTPUT (Standard on Series IE)
This output circuit is dedicated for emergency only lighting fixtures. Emergency only loads operate during power outages and when the system is on battery back up. This option leaves selective load circuits off during normal utility power conditions.

PANEL 'EL'

MAIN: 277VOLT,1-PH,2-WIRE & GND | ENCL.: NEMA 1 | BUS: 30 AMP | MIN A.I.C. RATING: 10K

LOAD VA	LIGHTING DESCRIPTION	TYPE	CB TYPE ON	OFF	LTS	CB / P	CKT #	PHASE	CKT #	CB / P	LTS	CB TYPE OFF	ON	LIGHTING TYPE	DESCRIPTION	LOAD VA
968	CORRIDOR	LED	X		0	20 / 1	1	A	2	20 / 1	0		X	LED	CONFERENCE ROOM	769
	SPARE			X	0	20 / 1	3	A	4	20 / 1	0	X				0
0	SPARE			X	0	20 / 1	5	A	6	20 / 1	0	X				0

PHASE	A
PHASE TOTAL CONNECTED VA:	1737
CONT. LOAD DEMAND @ 25%:	434
PANEL TOTAL W/ DEMAND:	2171
FULL LOAD AMPS:	10.4

INVERTER TOTAL		
1.7	KVA	
0.4	KVA	
2.2	KVA	
10.4	AMPS	

INVERTER LOCATION: ELEC ROOM
FED BY: PANEL HC

CLIENT
MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT
IDS
IDS GROUP
1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

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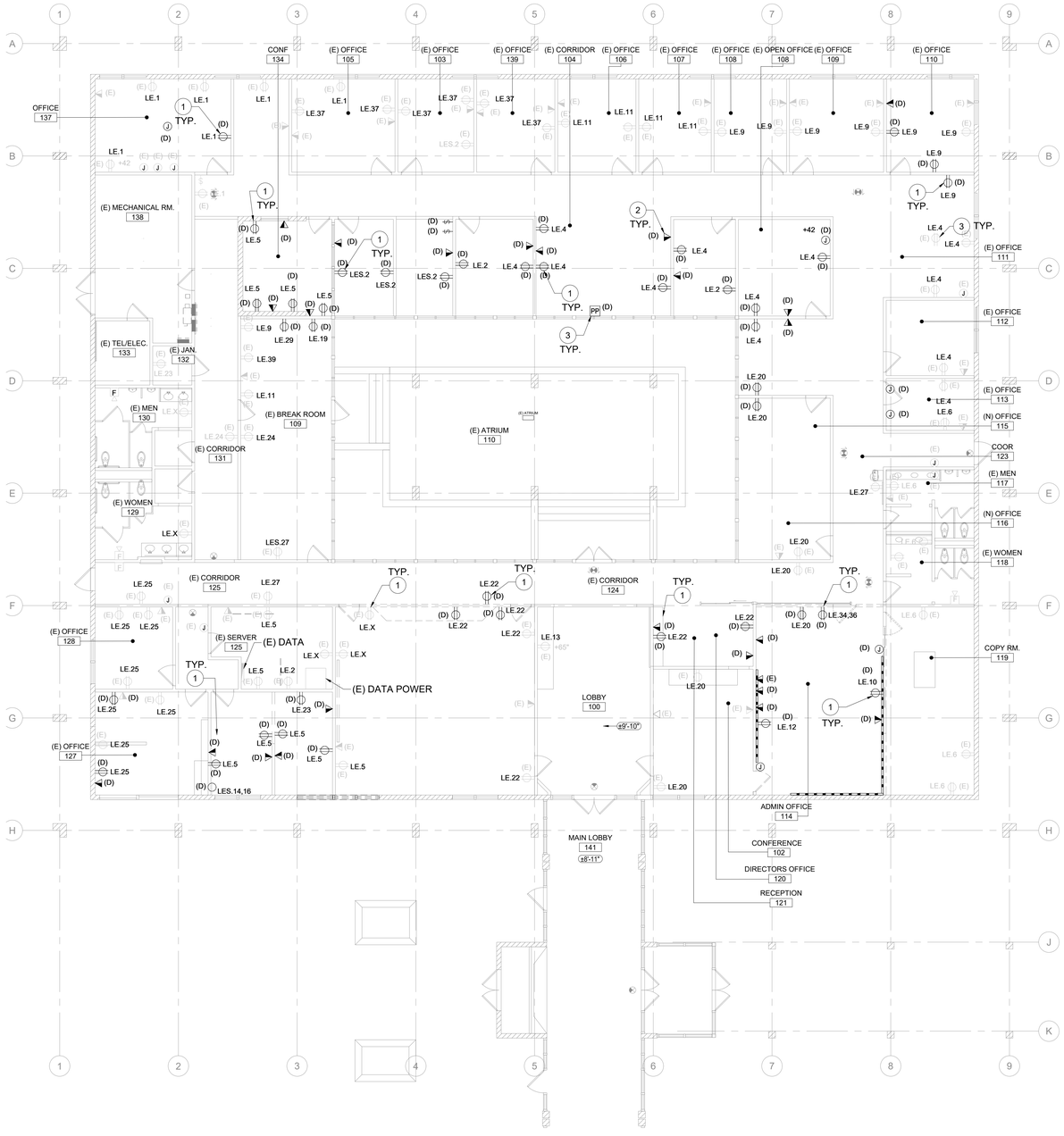
REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO. 18X093.00
PRINT DATE
DRAWN BY
CHECKED BY

SHEET TITLE
PANEL SCHEDULE

SHEET NUMBER
E-003
SHEET NO. OF



GENERAL DEMOLITION NOTES

1. REFER TO ARCH'L REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES.
2. VERIFY EXACT CEILING CONSTRUCTION W/ ARCH'L REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES W/ NECESSARY MOUNTING HARDWARE.
3. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS W/ MECHANICAL EQUIPMENT AND DUCT WORK PRIOR TO ROUGH-IN.
4. DIMMING BRANCH CIRCUITS SHALL BE PROVIDED W/ A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
5. PROGRAM ALL LIGHTING CONTROLS TO MEET THE LATEST REQUIREMENTS OF THE LIGHTING TITLE 24.
6. LIGHTING FIXTURES AND CONTROLS ARE NEW UNLESS OTHERWISE NOTED.
7. RECEPTACLES ON COMMON WALLS SHALL BE SEPARATE BOXES AND OFFSET 12" MINIMUM. FIRE RATED WALLS SHALL HAVE AN OFFSET OF 24" MINIMUM. COORDINATE W/ ARCH'L FIRE RATED WALL DETAILS.
8. HEIGHT OF RECEPTACLES AT COUNTER SHELVES, ETC., SHALL BE VERIFIED W/ OWNER PRIOR TO ROUGH-IN. PROVIDE G.F.C.I. TYPE RECEPTACLE WITHIN 6 FEET OF ANY SINK.
9. EACH AND EVERY 15 AND 20 AMP, 120 VOLT RECEPTACLE IN KITCHEN, FOOD PREPARATION, BAR AREAS AND RESTROOMS SHALL BE GFCI TYPE PROTECTION.
10. COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT AND POWER CONNECTION LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION. SEE MECHANICAL EQUIPMENT SCHEDULE FOR CIRCUIT DESIGNATION, CONDUIT AND WIRE SIZES.
11. THE EXISTING FIRE ALARM AND ENERGY MANAGEMENT SYSTEM AND OPERATIONAL REQUIREMENTS SHALL REMAIN AS IS. CONTRACTOR SHALL TAKE CAUTION PRIOR TO DISCONNECTING ANY DEVICES, EQUIPMENT, PRESERVE WIRING AND CIRCUITRY. RE-INSTALL ANY DEVICES, AS PART OF THE CONSTRUCTION COORDINATION, TO MATCH EXISTING CONDITIONS.

GENERAL NOTES

1. EXISTING EQUIPMENT WERE TAKEN FROM EXISTING CONDITION OF THE BUILDING. THE ELECTRICAL CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS AND EXISTING CIRCUIT NUMBERS; ADJUST AND UPDATE THE PANELBOARD DIRECTORIES.
2. COORDINATE THE EXTENT OF WORK WITH ARCHITECT AND OWNER.
3. REMOVE CONTROL DEVICES INDICATED ON PLANS UNLESS OTHERWISE NOTED.
4. EQUIPMENT TO BE REMOVED SHALL INCLUDE ASSOCIATED CONDUIT, WIRING AND APPURTENANCES BACK TO THE PANEL BOARD OR EXISTING DEVICE OR FIXTURE TO REMAIN.
5. COORDINATE WITH OWNER FOR SHUTDOWN OF PANELS / LOADS AFFECTED BY THE PROJECT.

KEY NOTES

1. PRESERVE EXISTING CIRCUIT IN CEILING SPACE FOR TENANT IMPROVEMENT CIRCUITRY.
2. DISCONNECT & REMOVE EXISTING DATA CABLING BACK TO SERVER ROOM. REMOVE BACK BOX OF ASSOCIATED DATA JACK DEVICE.
3. DISCONNECT & REMOVE EXISTING POWER POLE COMPLETE. PRESERVE EXISTING CIRCUIT.

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POWER PLAN - DEMOLITION | 1/8" = 1'-0" | 1

CLIENT
MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

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ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

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RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
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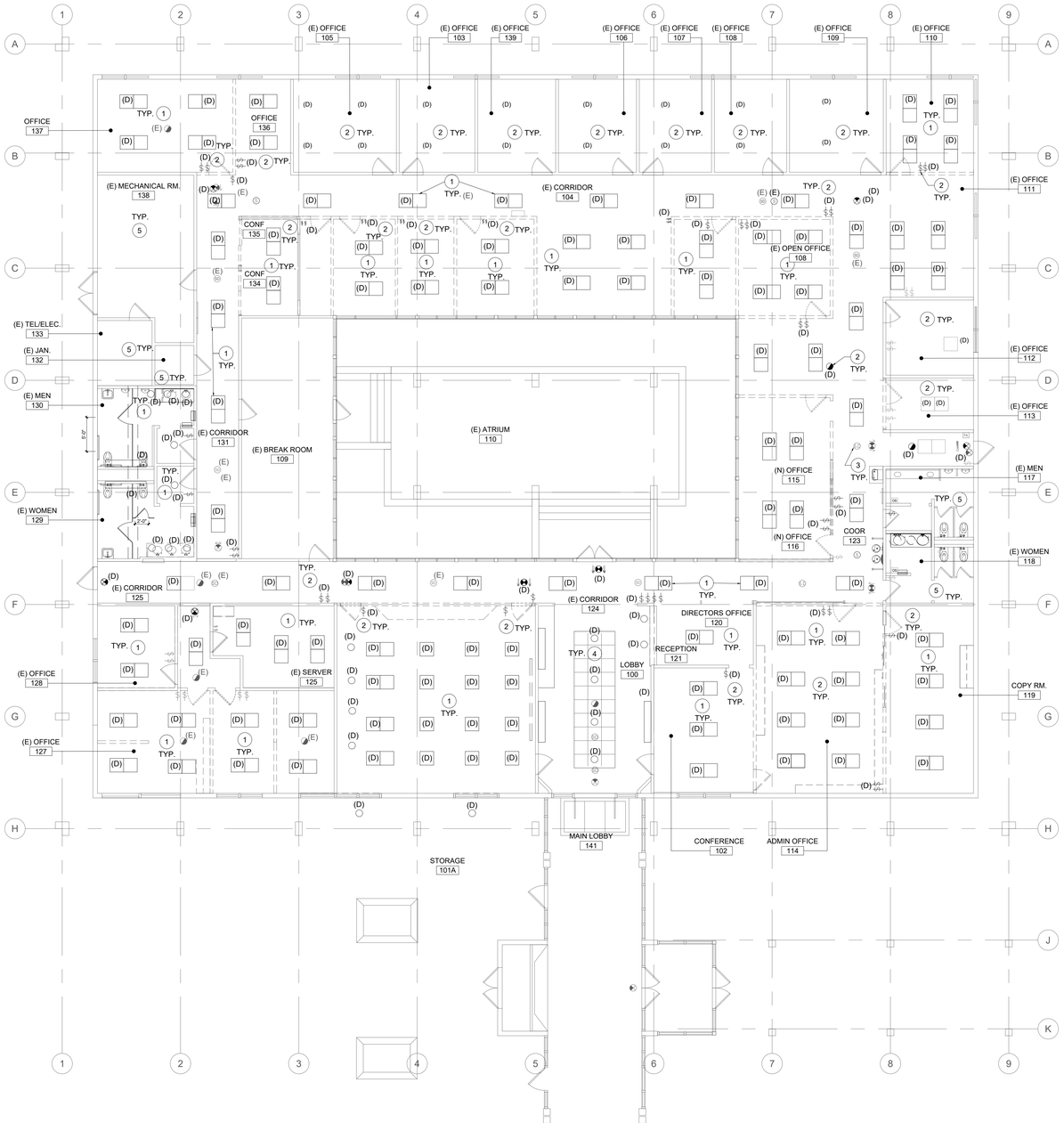
CHECKED BY	

SHEET TITLE
POWER PLAN DEMOLITION

SHEET NUMBER
E-101

SHEET NO. OF



GENERAL DEMOLITION NOTES

1. REFER TO ARCH'L REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES.
2. VERIFY EXACT CEILING CONSTRUCTION W/ ARCH'L REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES W/ NECESSARY MOUNTING HARDWARE.
3. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS W/ MECHANICAL EQUIPMENT AND DUCT WORK PRIOR TO ROUGH-IN.
4. DIMMING BRANCH CIRCUITS SHALL BE PROVIDED W/ A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
5. PROGRAM ALL LIGHTING CONTROLS TO MEET THE LATEST REQUIREMENTS OF THE LIGHTING TITLE 24.
6. LIGHTING FIXTURES AND CONTROLS ARE NEW UNLESS OTHERWISE NOTED.
7. RECEPTACLES ON COMMON WALLS SHALL BE SEPARATE BOXES AND OFFSET 12" MINIMUM. FIRE RATED WALLS SHALL HAVE AN OFFSET OF 24" MINIMUM. COORDINATE W/ ARCH'L FIRE RATED WALL DETAILS.
8. HEIGHT OF RECEPTACLES AT COUNTER SHELVES, ETC., SHALL BE VERIFIED W/ OWNER PRIOR TO ROUGH-IN. PROVIDE G.F.C.I. TYPE RECEPTACLE WITHIN 6 FEET OF ANY SINK.
9. EACH AND EVERY 15 AND 20 AMP, 120 VOLT RECEPTACLE IN KITCHEN, FOOD PREPARATION, BAR AREAS AND RESTROOMS SHALL BE GFCI TYPE PROTECTION.
10. COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT AND POWER CONNECTION LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION. SEE MECHANICAL EQUIPMENT SCHEDULE FOR CIRCUIT DESIGNATION, CONDUIT AND WIRE SIZES.
11. THE EXISTING FIRE ALARM AND ENERGY MANAGEMENT SYSTEM AND OPERATIONAL REQUIREMENTS SHALL REMAIN AS IS. CONTRACTOR SHALL TAKE CAUTION PRIOR TO DISCONNECTING ANY DEVICES, DOCUMENT, PRESERVE WIRING AND CIRCUITRY. RE-INSTALL ANY DEVICES, AS PART OF THE CONSTRUCTION COORDINATION, TO MATCH EXISTING CONDITIONS.

KEY NOTES

1. DISCONNECT & REMOVE OF DISPOSE OF EXISTING LIGHT FIXTURES. PRESERVE EXISTING CIRCUIT.
2. DISCONNECT & REMOVE EXISTING LIGHTING CONTROL DEVICES.
3. EXISTING FIRE ALARM SYSTEM DEVICES SHALL REMAIN & IN SERVICE DURING CONSTRUCTION.
4. DISCONNECT & REMOVE ALL EXISTING LOBBY LIGHTING FIXTURES. PRESERVE EXISTING CIRCUIT FOR TENANT IMPROVED LIGHTING.
5. EXISTING LIGHTING FIXTURE CIRCUITRY & ASSOCIATE LIGHTING CONTROLS TO REMAIN AS IS.

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LIGHTING PLAN - DEMOLITION | 1/8" = 1'-0" | 1

CLIENT

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PRINT DATE	
DRAWN BY	
CHECKED BY	

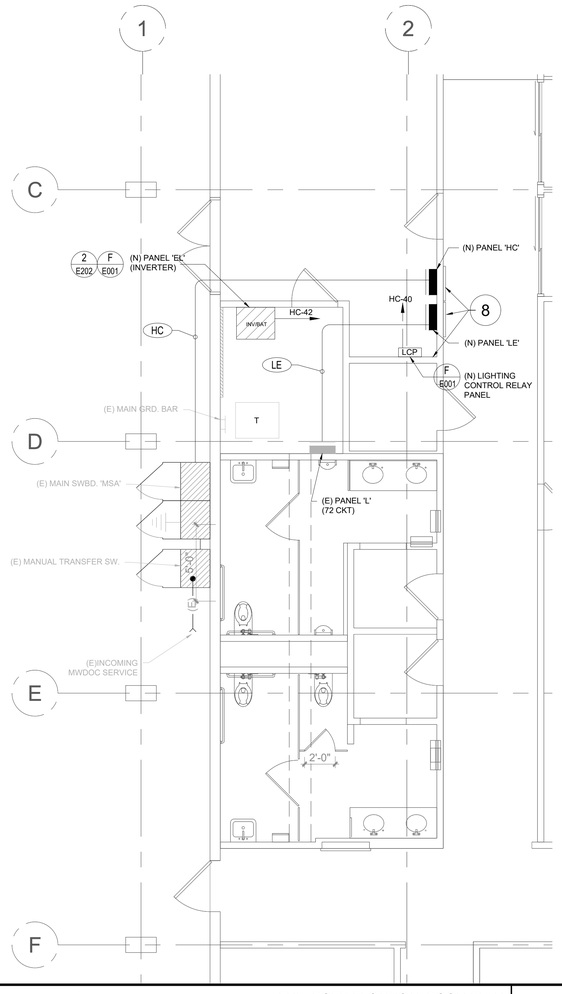
SHEET TITLE

LIGHTING PLAN DEMOLITION

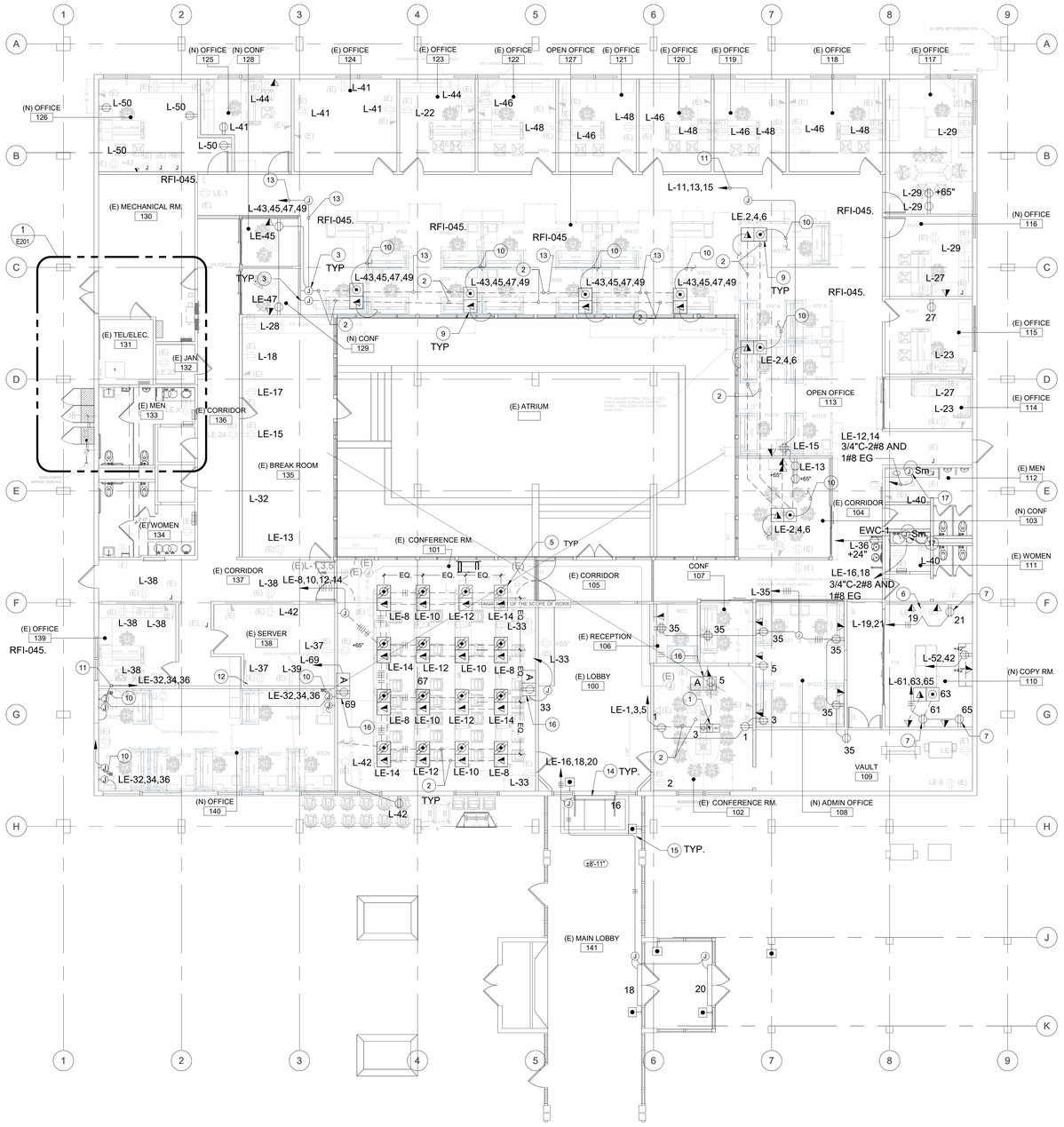
SHEET NUMBER

E-102

SHEET NO. OF



ENLARGED ELCTRICAL ROOM PLAN | 1/4"=1'-0" | 1



FLOOR PLAN - POWER | 1/8"=1'-0" | 1

GENERAL NOTES

1. RECEPTACLS ON COMMON WALLS SHALL BE SEPARATE BOXES AND OFFSET 12" MINIMUM. FIRE RATED WALLS SHALL HAVE AN OFFSET OF 24" MINIMUM. COORDINATE W/ ARCH'L FIRE RATED WALL DETAILS.
2. HEIGHT OF RECEPTACLS AT COUNTER SHELVES, ETC., SHALL BE VERIFIED W/ OWNER PRIOR TO ROUGH-IN. PROVIDE G.F.C.I. TYPE RECEPTACL WITHIN 6 FEET OF ANY SINK.
3. EACH AND EVERY 15 AND 20 AMP, 120 VOLT RECEPTACL IN RESTROOMS SHALL BE GFCI TYPE PROTECTION.
4. COORDINATE EXACT LOCATION OF MECHANICAL EQUIPMENT AND POWER CONNECTION LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION. SEE MECHANICAL EQUIPMENT SCHEDUL FOR CIRCUIT DESIGNATION, CONDUIT AND WIRE SIZES.
5. THE EXISTING FIRE ALARM AND ENERGY MANAGEMENT SYSTEM AND OPERATIONAL REQUIREMENTS SHALL REMAIN AS IS. CONTRACTOR SHALL TAKE CAUTION PRIOR TO DISCONNECTING ANY DEVICES, DOCUMENT, PRESERVE WIRING AND CIRCUITRY. RE-INSTALL ANY DEVICES, AS PART OF THE CONSTRUCTION COORDINATION, TO MATCH EXISTING CONDITIONS.
6. PRIOR TO SAW CUTTING CONCRETE FLOOR, CONTRACTOR SHALL PROVIDE AN ULTRASONIC DETECTION OF THE AREA AND CONFIRM THAT THE SLAB IS SUITABL FOR RENOVATION WORK.

KEY NOTES

16. PROVIDE 3 GANG CAST FLOOR BOX WITH FLIP LIP COVERS. ALUMINUM FINISH. PROVIDE 125V, 15A, L5-15R TYPE RECEPTACL IN ONE GANG, DATA JACK IN SECOND & THE THIRD GANG WILL BE AVAILABL FOR AUDIO VISUAL PROVISIONS. COORDINATE WITH MWDOC FOR DATA JACK & AV REQUIREMENTS.
2. SAW CUT EXISTING CONCRETE FLOOR, COORDINATE FLOOR & INSTALL (1) 3/4" PVC POWER CONDUIT & (1) 1 1/4" PVC DATA CONDUIT REPAIR FLOOR TO MATCH EXISTING CONDUITS.
3. INTERCEPT EXISTING POWER AND EXTEND TO UNDER FLOOR POWER BOX.
4. PROVIDE A FLUSH 12"X12"X4" HINGE COVER NEMA 1 PULL BOX EXTEND 1 1/4"C (EMT) ABOVE CEILING W/A 90° BEND & CONDUIT BUSHING EXTEND 1 1/4" CONDUIT UNDER FLOOR.
5. PROVIDE DUAL GANG CAST FLOOR BOX WITH FLIP LIP COVERS, ALUMINUM FINISH. PROVIDE (2) 125V, 15A, 25-15R TYPE RECEPTACLS IN DUAL GANG & 1" PVC WILL BE EQUIP FOR DATA CONDUIT. COORDINATE WITH MWDOC FOR DATA JACK PREORDINATION.
6. DISCONNECT, REMOVE AND REPLACE RECEPTACL WITH A 125V, 20A RATED RECEPTACL WITH COVER PLATE.
7. RECEPTACL SHALL BE RATED FOR 125V, 20A.
8. CONTRACTOR SHALL VERIFY ALL EXISTING CIRCUITS ASSOCIATED WITH THE EXISTING RECEPTACL, MECHANICAL EQUIPMENT, AND LIGHTING (ETC), TAG AND EXTEND TO NEW PANELS. CONTRACTOR SHALL PROVIDE UPDATE PANEL DIRECTORIES UPON COMPLTION. ONCE ALL BRANCH CIRCUITS HAVE BEEN RELOCATED, THE CONTRACTOR SHALL DISCONNECT & REMOVE EXISTING PANEL INTERIORS, BACKBOX AND CONDUIT. COORDINATE WITH THE GENERAL CONTRACTOR FOR WALL REPAIR AND FINISHES.
9. PROVIDE 2 GANG CAST FLOOR BOX WITH PROVISIONS TO PROVIDE FURNITURE WHIP FLEXIBLE CONNECTORS FOR POWER AND DATA. ALUMINUM FINISH.
10. FOR FURNITURE WHIP WILL BE PROVIDED BY FURNITURE MANUFACTURER.
11. FOR FURNITURE WHIP RUN (3) #12 HOT, (3)#12 NEUTRAL & (1) #12 GROUND IN ¾" C.
12. (4) 3" C.O. WITH 90 DEGREE BEND ABOVE CEILING WITH BUSHINGS.
13. FOR FURNITURE WHIP RUN (4) #12 HOT, (4)#12 NEUTRAL & (1) #12 GROUND IN ½" C.
14. AUTOMATIC ADA COMPLIANT MOTORIZED DOORS. REFER TO ARCHITECTURAL PLANS. MANUFACTURER'S EQUIPMENT BATTERY FOR 100 CYCLE OPERATION.
15. ADA PUSH WIRELESS BUTTON CONTROL PER DOOR MANUFACTURER. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS.
16. BACK BOX WILL BE FURNISHED AND INSTALLED BY AV CONTRACTOR. ELECTRICAL CONTRACTOR SHALL MAKE THE FINAL TERMINATING POWER.
17. PROVIDE 250V MOTOR RATED SWITCH AND SEAL TITE CONNECTION TO INSTA HOT LOCATED UNDER SINK. COORDINATE WITH PLUMBING CONTRACTOR.

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

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REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

SHEET TITLE

FLOOR PLAN POWER

SHEET NUMBER

E-201

SHEET NO. OF

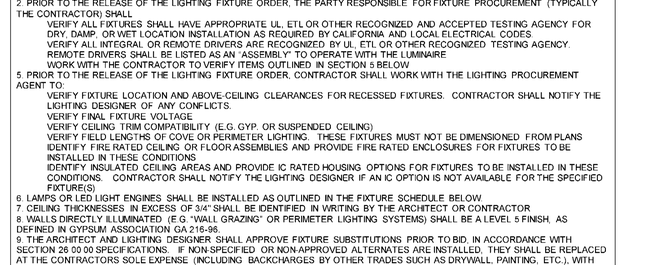
FIXTURE NOTES

1. FIXTURES SHALL INCLUDE ALL ACCESSORIES FOR INSTALLATION AS REQUIRED BY CALIFORNIA AND LOCAL ELECTRICAL CODES.
2. PRIOR TO THE RELEASE OF THE LIGHTING FIXTURE ORDER, THE PARTY RESPONSIBLE FOR FIXTURE PROCUREMENT (TYPICALLY THE CONTRACTOR) SHALL
   - VERIFY ALL FIXTURES SHALL HAVE APPROPRIATE UL, ETL OR OTHER RECOGNIZED AND ACCEPTED TESTING AGENCY FOR DRY, DAMP, OR WET LOCATION INSTALLATION AS REQUIRED BY CALIFORNIA AND LOCAL ELECTRICAL CODES.
   - VERIFY ALL INTEGRAL OR REMOTE DRIVERS ARE RECOGNIZED BY UL, ETL OR OTHER RECOGNIZED TESTING AGENCY.
   - REMOTE DRIVERS SHALL BE LISTED AS AN "ASSEMBLY" TO OPERATE WITH THE LUMINAIRE
   - WORK WITH THE CONTRACTOR TO VERIFY ITEMS OUTLINED IN SECTION 5 BELOW
5. PRIOR TO THE RELEASE OF THE LIGHTING FIXTURE ORDER, CONTRACTOR SHALL WORK WITH THE LIGHTING PROCUREMENT AGENT TO:
   - VERIFY FIXTURE LOCATION AND ABOVE-CEILING CLEARANCES FOR RECESSED FIXTURES. CONTRACTOR SHALL NOTIFY THE LIGHTING DESIGNER OF ANY CONFLICTS.
   - VERIFY FINAL FIXTURE VOLTAGE
   - VERIFY CEILING TRIM COMPATIBILITY (E.G. GYP. OR SUSPENDED CEILING)
   - VERIFY FIELD LENGTHS OF COVE OR PERIMETER LIGHTING. THESE FIXTURES MUST NOT BE DIMENSIONED FROM PLANS
   - IDENTIFY FIRE RATED CEILING OR FLOOR ASSEMBLIES AND PROVIDE FIRE RATED ENCLOSURES FOR FIXTURES TO BE INSTALLED IN THESE CONDITIONS
   - IDENTIFY INSULATED CEILING AREAS AND PROVIDE IC RATED HOUSING OPTIONS FOR FIXTURES TO BE INSTALLED IN THESE CONDITIONS. CONTRACTOR SHALL NOTIFY THE LIGHTING DESIGNER IF AN IC OPTION IS NOT AVAILABLE FOR THE SPECIFIED FIXTURE(S)
6. LAMPS OR LED LIGHT ENGINES SHALL BE INSTALLED AS OUTLINED IN THE FIXTURE SCHEDULE BELOW.
7. CEILING THICKNESSES IN EXCESS OF 3/4" SHALL BE IDENTIFIED IN WRITING BY THE ARCHITECT OR CONTRACTOR
8. WALLS DIRECTLY ILLUMINATED (E.G. "WALL GRAZING" OR PERIMETER LIGHTING SYSTEMS) SHALL BE A LEVEL 5 FINISH, AS DEFINED IN GYPSUM ASSOCIATION GA 216-96.
9. THE ARCHITECT AND LIGHTING DESIGNER SHALL APPROVE FIXTURE SUBSTITUTIONS PRIOR TO BID, IN ACCORDANCE WITH SECTION 26 00 00 SPECIFICATIONS. IF NON-SPECIFIED OR NON-APPROVED ALTERNATES ARE INSTALLED, THEY SHALL BE REPLACED AT THE CONTRACTORS SOLE EXPENSE (INCLUDING BACKCHARGES BY OTHER TRADES SUCH AS DRYWALL, PAINTING, ETC.), WITH NO ADDITIONAL COST TO THE OWNER.

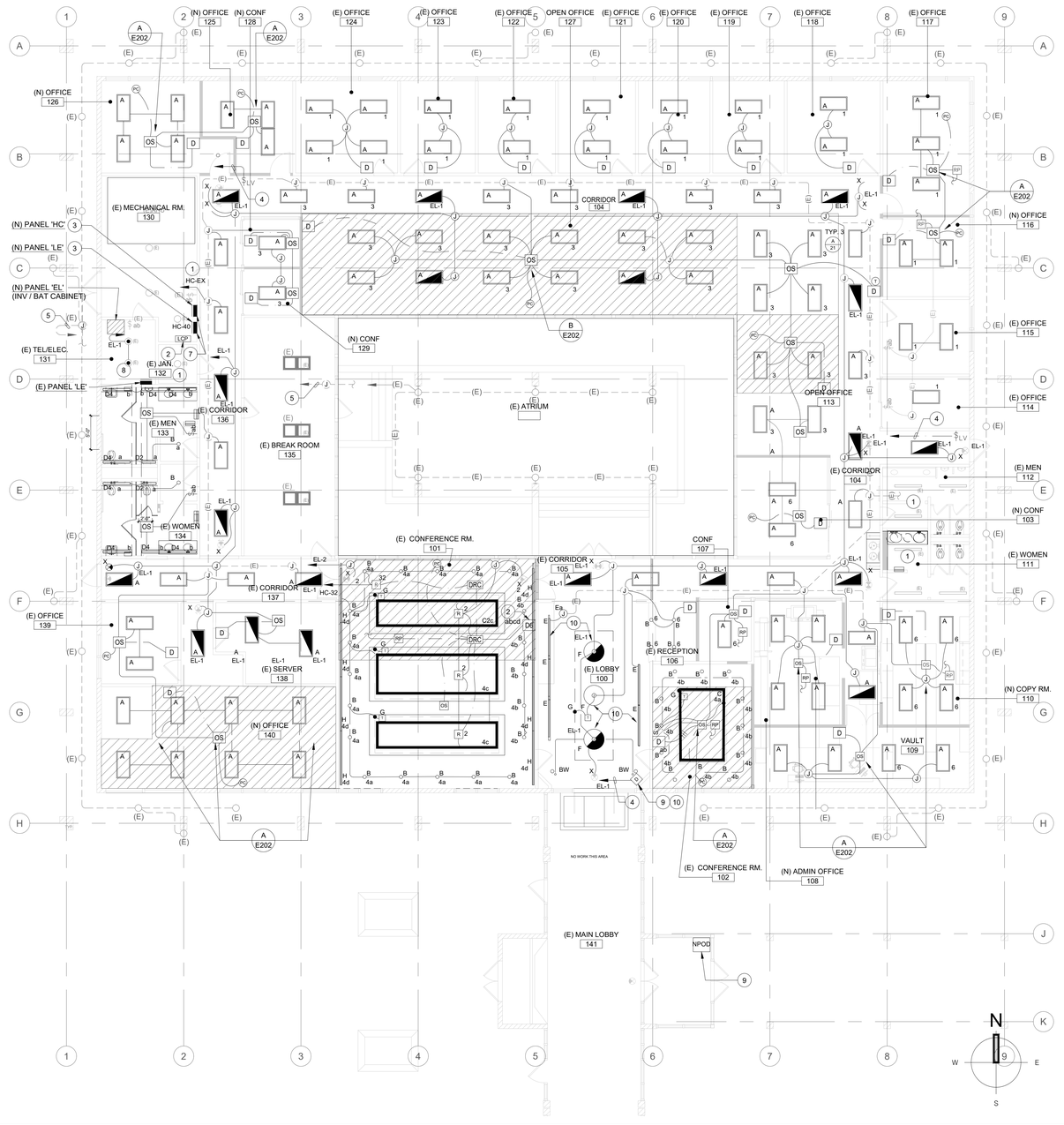
Latest revisions in **BOLD**

LIGHT FIXTURE SCHEDULE

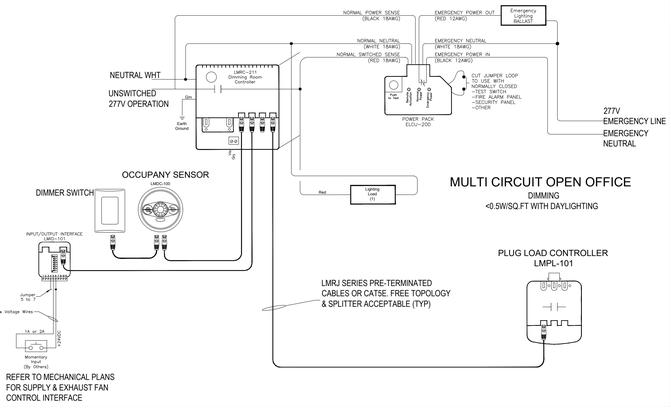
TYPE	DESCRIPTION	LOCATION	MANUFACTURER & CATALOG#	LUMENS OUTPUT / KELVIN TEMP	TOTAL WATTS	VOLTS	REMARKS
A	2x4 LED TROFFER 0-10V DIMMING DRIVER	OFFICES & CORRIDOR	SAYLITE #SBX SERIES	5000	40	277	RECESSED T-GRID. PROVIDE SEISMIC SUPPORTS
B	4" DIA. LED DOWN LIGHT WITH 0-10VDIMMING DRIVER IN A REGRESSED REFLECTOR LENS	CONF. ROOMS	DMF #DRD2 STANDARD SERIES	1090 / 3500K	12.8	277	T-GRID FRAME KIT
BW	4" DIA. LED WALL WASH DOWN LIGHT WITH 0-10V DIMMING DRIVER	CONF. ROOMS	DMF #DRD2 STANDARD SERIES	1090 / 3500K	12.8	277	GYP. BD. CEILING. EQUIP FRAME KIT
C	4", 2"x3" PERIMETER LINEAR LED FIXTURE WITH CONTINUOS SNAP ON LENS AND CAST ALUMINIUM HOUSING. 0-1V DIMMING	CONF. ROOMS	PRUDENTIAL # BOLT BOX SERIES	2565 / 3500K	5.75/LF	277	SURFACE MOUNTED TO SUSPENDED GYP. BD. CEILING. REFER TO ARCHITECTURAL
D2	LINEAR WALL SLOT LED FIXTURE WITH GRID TRIM. WHITE FINISH. FIELD CONFIRM LENGHTS FOR EXACT LINEAR COVE RUN	RESTROOMS	LITE CONTROL # WALL SLOT 6000 SERIES (2LF)	1200 / 3500K	18	277	GYP. BD. CEILING. EQUIP WITH EXTRUDED ALUM MOUNTING RAILS. REFER TO ARCHITECTURAL DETAILS
D4	LINEAR WALL SLOT LED FIXTURE WITH GRID TRIM. WHITE FINISH. FIELD CONFIRM LENGHTS FOR EXACT LINEAR COVE RUN	RESTROOMS	LITE CONTROL # WALL SLOT 6000 SERIES (4LF & 8LF RUNS)	1200 / 3500K	18	277	GYP. BD. CEILING. EQUIP WITH EXTRUDED ALUM MOUNTING RAILS. REFER TO ARCHITECTURAL DETAILS
E	8LF LINEAR LED ASYMMETRIC WALL WASH FIXTURE WITH 0-10V DRIVER.	LOBBY	PRUDENTIAL #MICRO WASH SERIES (8LF RUNS)	460lm/ft / 3500K	47	277	SURFACE MOUNTED. REFER TO ARCHITECTURAL DETAILS. FIELD ADJUST DIMMING
F	3" DIA. SEMI-RECESSED LED LIGHT FIXTURE WITH OPAL LENS & 0-10VDIMMING DRIVER. LOW LIGHT OUTPUT	LOBBY	PRUDENTIAL #9030 SKY SERIES	LO LUMEN OUTPUT / 3500K	56	277	RECESSED GYP. BD. CEILING
G	LED COVE LIGHT WITH EXTRUDED ALUMINUM CHANNEL AND LENS	CONF. ROOMS AND LOBBY	INFINEX CHANNEL SERIES TAPE LIGHT	91 LUMENS / LF 3500K	1.5W/LF	277	EQUIP WITH MANUFACTURERS STEPDOWN TRANSFORMER AND POWER SUPPLY. REFER TO ARCHITECTURAL DETAILS FOR MOUNTING
H	ASYMETRICAL WALL WASH LINEAR FIXTURE, 2 1/2" WIDE		PRUDENTIAL #23 SERIES	3500K	45W	277V	T-GRID RECSSED FIXTURE. SEE AREA DETAILS
X	EXIT SIGN. GREEN LED EDGE LIT		DUAL #EDGE LIT SERIES	5 / GREEN	5	277	CEILING MOUNTED. REFER TO ARCHTECTURAL PLANS FOR DIRECTIONAL ARROW REQUIREMENTS



LIGHTING CONTROL WIRING DIAGRAM | NONE | A



FLOOR PLAN - LIGHTING | 1/8" = 1'-0" | 1



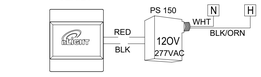
LIGHTING CONTROL WIRING DIAGRAM | NONE | B

Comments:

ID: LCP 1
Location:
Supply Circuit: Voltage: 120V Normal

Relay	Line Feed	Zone	Type	Voltage	Source	Description	Relay	Line Feed	Zone	Type	Voltage	Source	Description
1	HC-8		NC	120V	Normal	EXTERIOR LIGHTING	2	EL-1		NC	120V	Emerg	EMERG CORRIDOR LIGHTS
3	-		NC	120V	Normal		4	EL-2		NC	120V	Emerg	EMERG CONF. ROOM
5	-		NC	120V	Normal		6	-		NC	120V	Normal	
7	-		NC	120V	Normal		8	-		NC	120V	Normal	
9	-		NC	120V	Normal		10	-		NC	120V	Normal	
11	-		NC	120V	Normal		12	-		NC	120V	Normal	
13	-		NC	120V	Normal		14	-		NC	120V	Normal	
15	-		NC	120V	Normal		16	-		NC	120V	Normal	

NPOD GFX SERIES

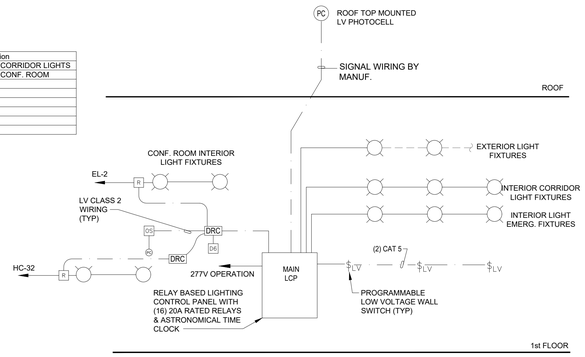


GRAPHIC WALLPOD W/ POWER SUPPLY

NETWORK LIGHTING CONTROL SYSTEM FOR LOBBY AREA

LEGEND

- DRC — ROOM CONTROLLER
- OS — DUAL TECHNOLOGY OCCUPANCY SENSOR
- R — DIMMING CONTROL RELAY
- RP — PLUG LOAD RELAY
- PC — LV PHOTOCELL
- LV — LV 4-STATION PROGRAMMABLE SWITCH (2 HOUR BY-PASS)
- nL — nPOD GFX SERIES FULL COLOR TOUCH SCREEN SWITCH CONTROL
- LV CLASS 2 WIRING (#18 THHN) IN 3/4"C., U.O.N.



BASIS OF DESIGN
GREEN MAX DRC SERIES RELAY BASED CONTROL PANEL AND ASSOCIATED COMPONENTS.

LIGHTING CONTROL RISER DIAGRAM | 1/8" = 1'-0" | 2

GENERAL NOTES

1. PROVIDE A DISCONNECTING MEANS FOR EACH MULTI-WIRE LIGHTING BRANCH CIRCUIT IN ACCORDANCE w/ NEC 410.130(G)(1) THRU (3). DISCONNECTING MEANS SHALL BE LOCATED AT POINT WHERE CIRCUIT ORIGINATES AND SHALL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS.
2. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES.
3. VERIFY EXACT CEILING CONSTRUCTION W/ ARCHITECTURAL REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES W/ NECESSARY MOUNTING HARDWARE.
4. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS W/ MECHANICAL EQUIPMENT AND DUCT WORK PRIOR TO ROUGH-IN.
5. RECESSED FIXTURES SHALL BE PROVIDED W/ ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY CURRENTLY ACCEPTED EDITION OF APPLICABLE NATIONAL, STATE, AND CITY CODES, ORDINANCES, AND AMENDMENTS.
6. DIMMING BRANCH CIRCUITS SHALL BE PROVIDED W/ A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
7. LOW VOLTAGE WIRING NOT RUN IN CONDUIT SHALL BE PLENUM RATED.
8. CONTRACTOR TO PROVIDE NECESSARY TRAVELER CONDUCTORS FOR ALL 3 AND 4 WAY SWITCHING APPLICATIONS.
9. GENERAL CONTRACTOR SHALL VERIFY CEILING FIRE RATING WITH ARCHITECT, AND BOX OR TENT RECESSED LIGHT FIXTURES, IF REQUIRED, TO MAINTAIN CEILING FIRE RATING.
10. PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
11. A CERTIFICATE OF ACCEPTANCE SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY UNDER TITLE 24, 130.4(a) OF PART 1 FOR: A. LIGHTING CONTROLS.
12. VERIFY EXACT CEILING CONSTRUCTION AT SITE AND PROVIDE LIGHTING FIXTURES W/ ALL NECESSARY MOUNTING HARDWARE.
13. ALL NEW FIXTURES SHALL BE PROVIDED W/ ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY CURRENTLY ACCEPTED EDITION OF ALL APPLICABLE NATIONAL, STATE, AND CITY CODES, ORDINANCES, AND AMENDMENTS.
14. PROGRAM ALL LIGHTING CONTROLS TO MEET THE LATEST REQUIREMENTS OF THE LIGHTING TITLE 24.
15. ALL LIGHTING FIXTURES AND CONTROLS ARE NEW UNLESS OTHERWISE NOTED.
16. LIGHT FIXTURES WITH INTERFACE WITH THE MECHANICAL VARIABLE REFRIGERATION SUPPLY AND EXHAUST FANS. CONTRACTOR SHALL REFER AND COORDINATE WITH THE MECHANICAL PLANS FOR LIGHTING OCCUPANCY SENSOR 0-10VDC OUTPUT SIGNAL. ELECTRICAL CONTRACTOR SHALL PROVIDE PLENUM RATED LOW VOLTAGE WIRING TO THE MECHANICAL EQUIPMENT ACCORDINGLY.
17. CONTRACTOR SHALL FIELD VERIFY ALL CIRCUITS ASSOCIATED WITH EXISTING PANEL 'HC', TAG AND EXTEND TO PANEL 'HC' NEW LOCATION AND RECONNECT. UPDATE PANEL DIRECTORIES ACCORDINGLY.
18. THE EXISTING FIRE ALARM AND ENERGY MANAGEMENT SYSTEM AND OPERATIONAL REQUIREMENTS SHALL REMAIN AS IS. CONTRACTOR SHALL TAKE CAUTION PRIOR TO DISCONNECTING ANY DEVICES, DOCUMENT, PRESERVE WIRING AND CIRCUITRY, RE-INSTALL ANY DEVICES, AS PART OF THE CONSTRUCTION COORDINATION, TO MATCH EXISTING CONDITIONS.

KEY NOTES

1. EXISTING LIGHTING & ASSOCIATED CONTROL TO REMAIN AS IS.
2. RELAY BASED LIGHTING CONTROL PANEL. ALL PROGRAMMING SHALL BE COORDINATED WITH THE OWNER FOR SEQUENCE OF OPERATION.
3. DISCONNECT, REMOVE, AND EXTEND ALL EXISTING CIRCUITS IN EXISTING PANEL TO NEW PANEL 'HC'. PROVIDE AN ABOVE CEILING WIREWAY ABOVE PANEL FOR INTERCEPTING EXISTING CIRCUITS.
4. EXTEND CAT 5 WIRING TO LIGHTING CONTROL RELAY PANEL. REFER TO LIGHT CONTROL RISER DIAGRAM, DETAIL 2/SHEET E-202
5. INTERCEPT EXISTING EXTERIOR LIGHTING CIRCUIT AND EXTEND TO NEW PANEL VIA THE LIGHTING CONTROL RELAY CABINET.
6. PROVIDE A SIX STATION PROGRAMMABLE DIMMING STATION WITH ASSOCIATED RELAYS, COMBINATION OCCUPANCY SENSOR / PHOTOCELL, ROOM CONTROLLER AND LOW VOLTAGE WIRING. LEVITON # GREEN MAX DRC SERIES.
7. FIELD VERIFY EXISTING CIRCUIT, EXTEND TO UPGRADED PANEL LOCATION, AND RECONNECT. UPDATE PANEL DIRECTORY FOR EXACT CIRCUIT IDENTIFIED.
8. DISCONNECT AND REMOVE EXISTING CIRCUIT AND RECONNECT TO PANEL EL-1.
9. LV LCD TOUCH SCREEN, PROGRAMMABLE WIRING CONTROL DEVICE WITH 2 HOUR BY PASS NLIGHT # nPOD GFX.
10. PROGRAM LIGHT FIXTURE FOR DIMMING CAPABILITIES.

CLIENT

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RECORD DRAWINGS

PROJECT NO.	18X093.00
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DRAWN BY	AY
CHECKED BY	WM

SHEET TITLE

FLOOR PLAN LIGHTING AND FIXTURE SHEDULE

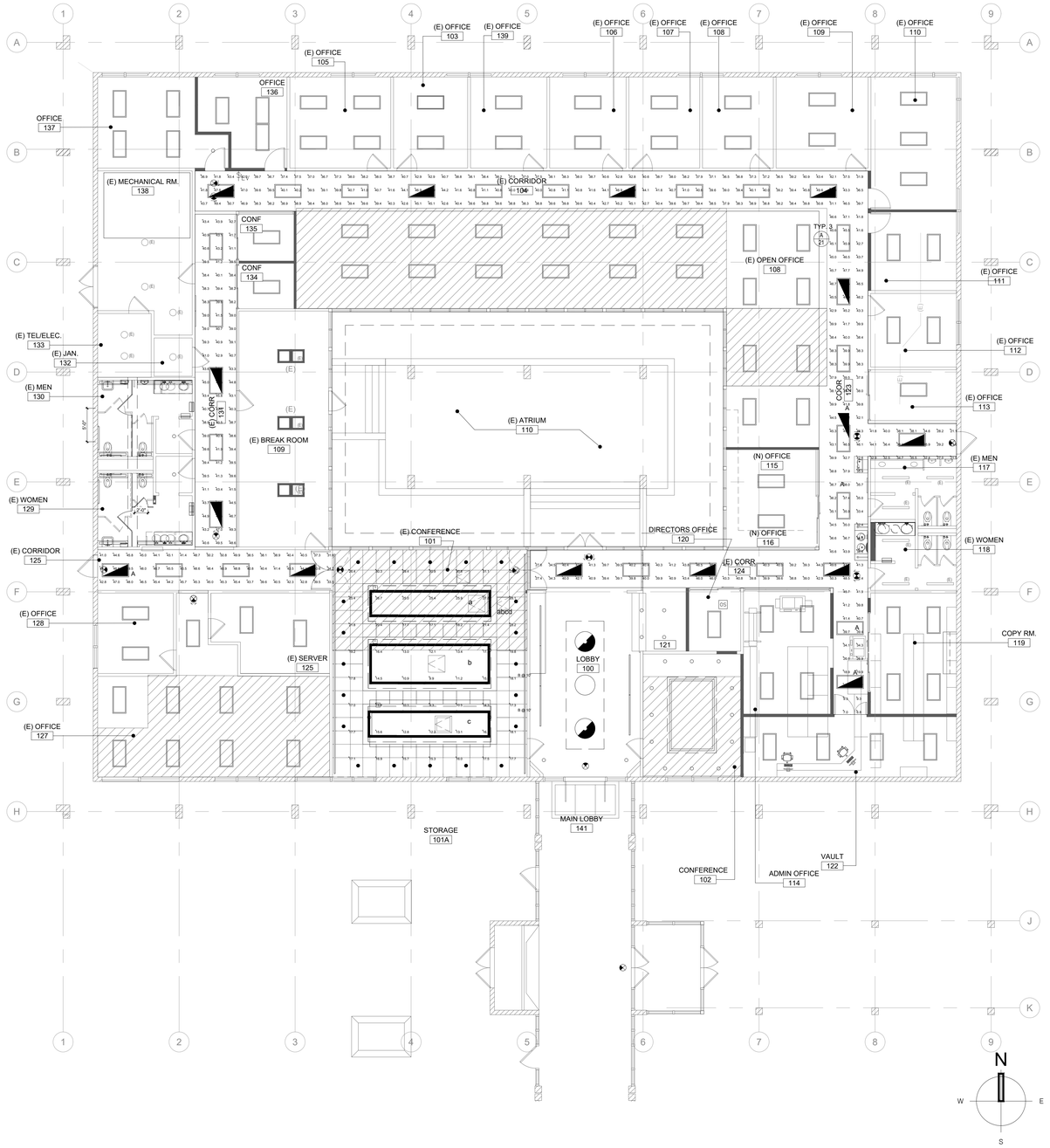
SHEET NUMBER

E-202

SHEET NO. OF

Schedule											
Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens per Lamp	LLF	Wattage
	A	40					1	FPELP24L50WDMV50K.IES	1000	0.8	40
	B	20	DMF Lighting	DRD2M10935-DRD2TR4SWH	N/A	N/A	1	DRD2M10935-DRD2TR4SWH.ies	1024	0.8	12.8

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Conference Room	+	18.8 fc	31.1 fc	9.3 fc	3.3:1	2.0:1
Corridor 104, 123, 131	+	34.5 fc	44.4 fc	6.0 fc	7.4:1	5.8:1
Corridor 108	+	36.4 fc	43.1 fc	33.2 fc	1.3:1	1.1:1
Corridor 125	+	38.3 fc	43.6 fc	31.1 fc	1.4:1	1.2:1



PHOTOMETRIC CALCULATION | 1/8" = 1'-0" | 1

GENERAL NOTES

1. PROVIDE A DISCONNECTING MEANS FOR EACH MULTI-WIRE LIGHTING BRANCH CIRCUIT IN ACCORDANCE w/ NEC 410.130(G)(1) THRU (3). DISCONNECTING MEANS SHALL BE LOCATED AT POINT WHERE CIRCUIT ORIGINATES AND SHALL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS.
2. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES.
3. VERIFY EXACT CEILING CONSTRUCTION W/ ARCHITECTURAL REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES W/ NECESSARY MOUNTING HARDWARE.
4. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS W/ MECHANICAL EQUIPMENT AND DUCT WORK PRIOR TO ROUGH-IN.
5. RECESSED FIXTURES SHALL BE PROVIDED W/ ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY CURRENTLY ACCEPTED EDITION OF APPLICABLE NATIONAL, STATE, AND CITY CODES, ORDINANCES, AND AMENDMENTS.
6. DIMMING BRANCH CIRCUITS SHALL BE PROVIDED W/ A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
7. LOW VOLTAGE WIRING NOT RUN IN CONDUIT SHALL BE PLENUM RATED.
8. CONTRACTOR TO PROVIDE NECESSARY TRAVELER CONDUCTORS FOR ALL 3 AND 4 WAY SWITCHING APPLICATIONS.
9. GENERAL CONTRACTOR SHALL VERIFY CEILING FIRE RATING WITH ARCHITECT, AND BOX OR TENT RECESSED LIGHT FIXTURES, IF REQUIRED, TO MAINTAIN CEILING FIRE RATING.
10. PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
11. A CERTIFICATE OF ACCEPTANCE SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY UNDER TITLE 24, 130.4(a) OF PART 1 FOR: A. LIGHTING CONTROLS.
12. VERIFY EXACT CEILING CONSTRUCTION AT SITE AND PROVIDE LIGHTING FIXTURES W/ ALL NECESSARY MOUNTING HARDWARE.
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14. PROGRAM ALL LIGHTING CONTROLS TO MEET THE LATEST REQUIREMENTS OF THE LIGHTING TITLE 24.
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SHEET TITLE

PHOTOMETRIC CALCULATION

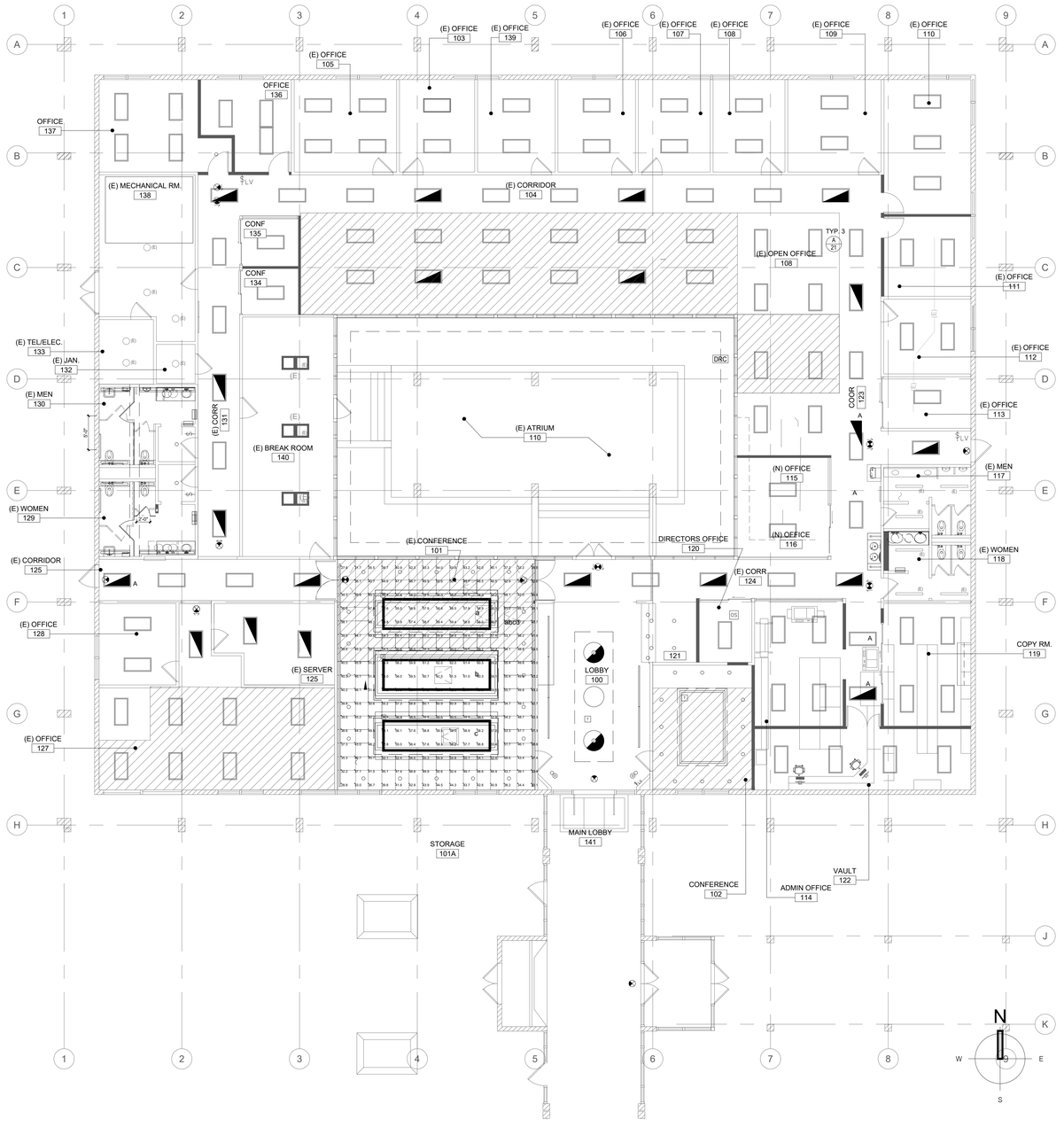
SHEET NUMBER

E-401

SHEET NO. OF

Schedule											
Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens per Lamp	LLF	Wattage
◯	B	20	DMF Lighting	DRD2M10935-DRD2TR4SWH	N/A	N/A	1	DRD2M10935-DRD2TR4SWH.ies	1024	0.92	13.5
|	C	30	PRUDENTIAL				1	Bolt-LED35-SO.ies	3039	0.8	28

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Conference Room	+	50.1 fc	62.3 fc	27.6 fc	2.3:1	1.8:1



EMERGENCY PHOTOMETRIC CALCULATION | 1/8" = 1'-0" | 1

GENERAL NOTES

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3. VERIFY EXACT CEILING CONSTRUCTION W/ ARCHITECTURAL REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES W/ NECESSARY MOUNTING HARDWARE.
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8. CONTRACTOR TO PROVIDE NECESSARY TRAVELER CONDUCTORS FOR ALL 3 AND 4 WAY SWITCHING APPLICATIONS.
9. GENERAL CONTRACTOR SHALL VERIFY CEILING FIRE RATING WITH ARCHITECT, AND BOX OR TENT RECESSED LIGHT FIXTURES, IF REQUIRED, TO MAINTAIN CEILING FIRE RATING.
10. PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
11. A CERTIFICATE OF ACCEPTANCE SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY UNDER TITLE 24, 130.4(a) OF PART 1 FOR: A. LIGHTING CONTROLS.
12. VERIFY EXACT CEILING CONSTRUCTION AT SITE AND PROVIDE LIGHTING FIXTURES W/ ALL NECESSARY MOUNTING HARDWARE.
13. ALL NEW FIXTURES SHALL BE PROVIDED W/ ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY CURRENTLY ACCEPTED EDITION OF ALL APPLICABLE NATIONAL, STATE, AND CITY CODES, ORDINANCES, AND AMENDMENTS.
14. PROGRAM ALL LIGHTING CONTROLS TO MEET THE LATEST REQUIREMENTS OF THE LIGHTING TITLE 24.
15. ALL LIGHTING FIXTURES AND CONTROLS ARE NEW UNLESS OTHERWISE NOTED.
16. LIGHT FIXTURES WITH INTERFACE WITH THE MECHANICAL VARIABLE REFRIGERATION SUPPLY AND EXHAUST FANS. CONTRACTOR SHALL REFER AND COORDINATE WITH THE MECHANICAL PLANS FOR LIGHTING OCCUPANCY SENSOR 0-10VDC OUTPUT SIGNAL. ELECTRICAL CONTRACTOR SHALL PROVIDE PLENUM RATED LOW VOLTAGE WIRING TO THE MECHANICAL EQUIPMENT ACCORDINGLY.

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS GROUP

1 PETERS CANYON ROAD, SUITE 130
IRVINE, CA 92606
TEL: 949-387-8500, FAX: 949-387-0800

STAMP

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ISSUE		
REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

SHEET TITLE

EMERGENCY PHOTOMETRIC CALCULATION

SHEET NUMBER

E-402

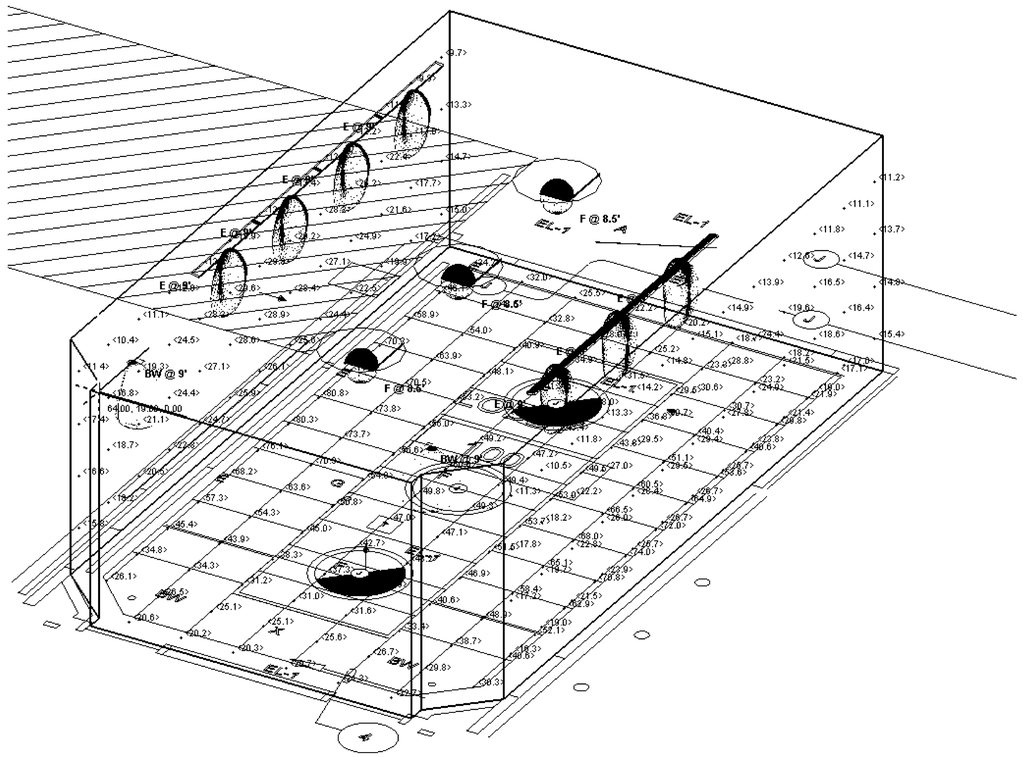
SHEET NO. OF

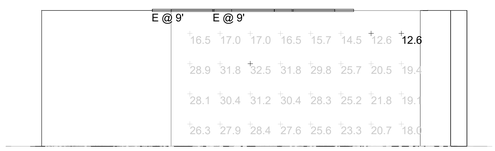
Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage	Description
	BW	2	DMF Lighting	DRD2M7935-DRD2TR4WWH	N/A	1	DRD2M7935-DRD2TR4WWH.ies	709	0.8	11.6	N/A
	E	7	PRUDENTIAL LTG.	MW-LED35-HO-D1		1	MW-LED35-SO.ies	4268	0.8	47	1-3/4"L. x 48W. X 4-3/4"H. LED FIXTURE LINEAR PRISMATIC LENS
	F	3	Prudential Ltg	MW-LED35-HO-D1		1	P3930-LED4-LO-FWA-D1.ies	4932	0.4	56	1-3/4"L. x 48W. X 4-3/4"H. LED FIXTURE LINEAR PRISMATIC LENS

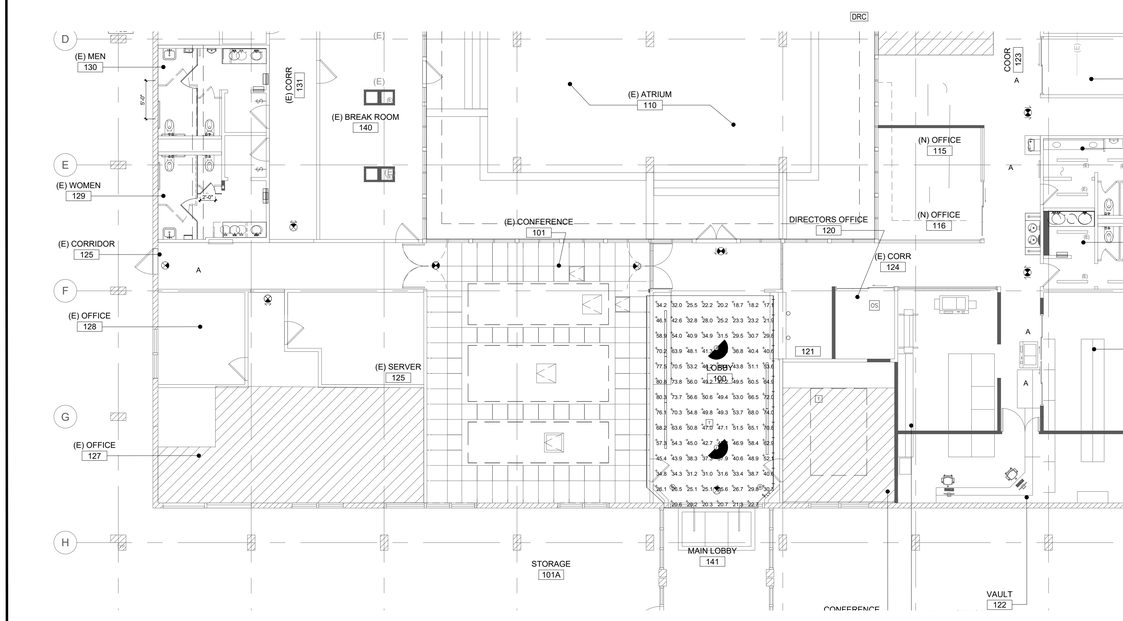
Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
East Wall WW Fixture Calc	+	20.0 fc	30.7 fc	10.5 fc	2.9:1	1.9:1
Overall Lobby Floor	+	44.3 fc	80.8 fc	17.1 fc	4.7:1	2.6:1
West Wall WW fixture Calc	+	19.9 fc	29.8 fc	9.7 fc	3.1:1	2.1:1





EAST WALL ELEVATION PHOTOMETRIC



LOBBY PHOTOMETRIC CALCULATION | 1/8" = 1'-0" | 1

GENERAL NOTES

1. PROVIDE A DISCONNECTING MEANS FOR EACH MULTI-WIRE LIGHTING BRANCH CIRCUIT IN ACCORDANCE w/ NEC 410.130(G)(1) THRU (3). DISCONNECTING MEANS SHALL BE LOCATED AT POINT WHERE CIRCUIT ORIGINATES AND SHALL SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS.
2. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHTING FIXTURES.
3. VERIFY EXACT CEILING CONSTRUCTION W/ ARCHITECTURAL REFLECTED CEILING PLAN AND PROVIDE LIGHTING FIXTURES W/ NECESSARY MOUNTING HARDWARE.
4. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS W/ MECHANICAL EQUIPMENT AND DUCT WORK PRIOR TO ROUGH-IN.
5. RECESSED FIXTURES SHALL BE PROVIDED W/ ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY CURRENTLY ACCEPTED EDITION OF APPLICABLE NATIONAL, STATE, AND CITY CODES, ORDINANCES, AND AMENDMENTS.
6. DIMMING BRANCH CIRCUITS SHALL BE PROVIDED W/ A DEDICATED NEUTRAL CONDUCTOR FOR EACH ZONE/CHANNEL.
7. LOW VOLTAGE WIRING NOT RUN IN CONDUIT SHALL BE PLENUM RATED.
8. CONTRACTOR TO PROVIDE NECESSARY TRAVELER CONDUCTORS FOR ALL 3 AND 4 WAY SWITCHING APPLICATIONS.
9. GENERAL CONTRACTOR SHALL VERIFY CEILING FIRE RATING WITH ARCHITECT, AND BOX OR TENT RECESSED LIGHT FIXTURES, IF REQUIRED, TO MAINTAIN CEILING FIRE RATING.
10. PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROTECTED FROM THE SPREAD OF FIRE WITH AN APPROVED FIRESTOP SYSTEM EQUAL OR GREATER THAN THE FIRE RATING OF THE WALL.
11. A CERTIFICATE OF ACCEPTANCE SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY UNDER TITLE 24, 130.4(a) OF PART 1 FOR: A. LIGHTING CONTROLS.
12. VERIFY EXACT CEILING CONSTRUCTION AT SITE AND PROVIDE LIGHTING FIXTURES W/ ALL NECESSARY MOUNTING HARDWARE.
13. ALL NEW FIXTURES SHALL BE PROVIDED W/ ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY CURRENTLY ACCEPTED EDITION OF ALL APPLICABLE NATIONAL, STATE, AND CITY CODES, ORDINANCES, AND AMENDMENTS.
14. PROGRAM ALL LIGHTING CONTROLS TO MEET THE LATEST REQUIREMENTS OF THE LIGHTING TITLE 24.
15. ALL LIGHTING FIXTURES AND CONTROLS ARE NEW UNLESS OTHERWISE NOTED.
16. LIGHT FIXTURES WITH INTERFACE WITH THE MECHANICAL VARIABLE REFRIGERATION SUPPLY AND EXHAUST FANS. CONTRACTOR SHALL REFER AND COORDINATE WITH THE MECHANICAL PLANS FOR LIGHTING OCCUPANCY SENSOR 0-10VDC OUTPUT SIGNAL. ELECTRICAL CONTRACTOR SHALL PROVIDE PLENUM RATED LOW VOLTAGE WIRING TO THE MECHANICAL EQUIPMENT ACCORDINGLY.

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

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PROJECT NO.	18X093.00
PRINT DATE	
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CHECKED BY	

SHEET TITLE

LOBBY PHOTOMETRIC CALCULATION

SHEET NUMBER

E-403

SHEET NO. OF

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 7/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: MWDJC - Seismic Retrofit		Report Page:	Page 3 of 7
Project Address: 18700 Ward Street		Date Prepared:	2/2/2021

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

Table Instructions:
*Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls

01	02	03	
Mandatory Demand Response	Shut-off Controls	Field Inspector	
§130.1(e)	§130.1(c)	Pass	Fail
Not Required < 10,000 SF	Whole Building: EMCS	☐	☐

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1(a)	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector Pass	Field Inspector Fail
Entry Lobby 100	Lobby, Main Entry	Manual ON/OFF	Dimmer	Occ Sensor	N/A	N/A	☐	☐	☐
Conference 101	Convention/Conference/Meeting	Manual ON/OFF	Bi-level Switch	Occ Sensor	N/A	N/A	☐	☐	☐
Office 136, 137,110, 111, 127, 128	Office <= 250 sqft	Manual ON/OFF	Dimmer	Occ Sensor	N/A	N/A	☐	☐	☐
Corridor 104,123.124,125 and 131	Corridor/Restroom/Support	Manual ON/OFF	Bi-level Switch	See Bldg Level	N/A	N/A	☐	☐	☐
Open Office Area 115	Office > 250 sqft	Manual ON/OFF	Dimmer	Occ Sensor	Included	N/A	☐	☐	☐
Conference 102	Convention/Conference/Meeting	Manual ON/OFF	Dimmer	Occ Sensor	Included	N/A	☐	☐	☐
Office 127	Office > 250 sqft	Manual ON/OFF	Dimmer	Occ Sensor	Included	N/A	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Conference 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting; EXCEPTION 1 to §130.1(d)2

13
Plan Sheet Showing Daylit Zones:

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b). Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06		
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustments Footnotes	PAF	Portable Ltg
Whole Building	Office Building	0.8	8,543	6,834.4	☐	☐	☐

Table Continued

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 7/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: MWDJC - Seismic Retrofit		Report Page:	Page 2 of 7
Project Address: 18700 Ward Street		Date Prepared:	2/2/2021

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

01	02	03		04	05	06	07	08	09	
Name or Item Tag	Complete Luminaire Description	Specialized Luminaire Types Track	Portable	Watts per luminaire[1]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector Pass	Field Inspector Fail
A	2'x4' Flat Panel LED	☐	☐	40	Mfr. Spec[1]	95	☐	3,800	☐	☐
B	4" Downlight LED	☐	☐	12.8	Mfr. Spec[1]	37	☐	473.6	☐	☐
BW	4" Wall Wash LED	☐	☐	12.8	Mfr. Spec[1]	2	☐	25.6	☐	☐
C	1X4 Linear LED CB	☐	☐	23	Mfr. Spec[1]	5	☐	115	☐	☐
D2	1X2 Linear Wall Slot LED	☐	☐	18	Mfr. Spec[1]	2	☐	36	☐	☐
D4	1X4 Linear Wall Slot LED	☐	☐	18	Mfr. Spec[1]	8	☐	144	☐	☐
E	1X8 Linear LED	☐	☐	39	Mfr. Spec[1]	13	☐	507	☐	☐
F	3' Dia Pendant LED	☐	☐	56	Mfr. Spec[1]	3	☐	168	☐	☐
G	Cove Light 1.5LF	☐	☐	1.5	Mfr. Spec[1]	218	☐	327	☐	☐
X	Exit Sign	☐	☐	5	Mfr. Spec[1]	8	☐	40	☐	☐
					Total Designed Watts CONDITIONED SPACES:			**5,636.2**		

[1]NOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.

G. TRACK LIGHTING

This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 7/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: MWDJC - Seismic Retrofit		Report Page:	Page 1 of 7
Project Address: 18700 Ward Street		Date Prepared:	2/2/2021

A. GENERAL INFORMATION

01	Project Location (city)	Fountain Valley	04	Total Conditioned Floor Area (ft²)	8,543
02	Climate Zone	6	05	Total Unconditioned Floor Area (ft²)	0
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

☑ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☐ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☐ Other (write in):

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work		Conditioned Spaces		Unconditioned Spaces	
01		02	03	04	05
My Project Consists of (check all that apply):		Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☐ New Lighting System					
☑ Altered Lighting System	Entire Luminaire Alteration	Complete Building	8,543	Complete Building	0
	Total Area of Work (ft²)	**8,543**		**0**	

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

	Allowed Lighting Power per §140.6(b) (Watts)						Actual Lighting Power per §140.6(a) (Watts)					Compliance Results
	01	02	03	04		05	06	07	08		09	10
Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b).	Complete Building §140.6(c)1 (See Table I)	Area Category §140.6(c)2 (See Table I)	Area Category Footnotes §140.6(c)2G (+) (See Table K)	Tailored §140.6(c)3 (+) (See Table L)	=	**Total Allowed** (Watts)	Total Designed (Watts)	Adjustments: Portable Lighting §140.6(a) (-) (See Table J)	Adjustments: PAF Control Credits §140.6(a)2 (-) (See Table R)	=	**Total Actual** (Watts) *Includes Adjustments	**05 Must be ≥ 09** §140.6
Conditioned:	6,834.4				=	**6,834.4**	≥ 5,636.2			=	**5,636.2**	**COMPLIES**
Unconditioned:					=		≥			=		
							Controls Compliance (See Table H for Details)					**COMPLIES**
							Rated Power Reduction Compliance (See Table S for Details)					**Not Applicable**

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 7/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: MWDJC - Seismic Retrofit		Report Page:	Page 6 of 7
Project Address: 18700 Ward Street		Date Prepared:	2/2/2021

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
◉	○	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 7/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: MWDJC - Seismic Retrofit		Report Page:	Page 5 of 7
Project Address: 18700 Ward Street		Date Prepared:	2/2/2021

S. RATED POWER REDUCTION COMPLIANCE BY SPACE

This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at http://www.energy.ca.gov/2015publications/CEC-400-2015-033/appendices/forms/NRCI

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
◉	○	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 7/18) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: MWDJC - Seismic Retrofit		Report Page:	Page 4 of 7
Project Address: 18700 Ward Street		Date Prepared:	2/2/2021

01	02	03	04	05	06		
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustments Footnotes	PAF	Portable Ltg
		TOTAL:	**8,543**	**6,834.4**	See Tables J, K, R for detail		

J. POWER ADJUSTMENT: PORTABLE LIGHTING IN OFFICES

This Section Does Not Apply

K. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD FOOTNOTES

This Section Does Not Apply

L. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED SPECIAL FUNCTION AREAS

This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This Section Does Not Apply

P. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This Section Does Not Apply

Q. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This Section Does Not Apply

R. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (PAF)

This Section Does Not Apply

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018

STATE OF CALIFORNIA
Indoor Lighting
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CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name: MWDJC - Seismic Retrofit		Report Page:	Page 7 of 7
Project Address: 18700 Ward Street		Date Prepared:	2/2/2021

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Documentation Author Name:	Bob.Kramer	Documentation Author Signature:	
Company:	IDS	Signature Date:	02/02/2021
Address:	1 Peters Canyon Road	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Irvine, CA 92606	Phone:	(949) 387-8500

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Robin O'Neil	Responsible Designer Signature:	
Company :	IDS Electrical Engineers, Inc.	Date Signed:	02/02/2021
Address:	1 Peters Canyon Road, Suite 130	License:	E18557
City/State/Zip:	Irvine, CA 92606	Phone:	(949) 387-8500

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance: http://www.energy.ca.gov/title24/2016standards July 2018

CLIENT

MWDOC

18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT

IDS

IDS GROUP

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RECORD DRAWINGS

PROJECT NO.	18X093.00
PRINT DATE	
DRAWN BY	
CHECKED BY	

SHEET TITLE

TITLE 24 INDOOR COMPLIANCE FORMS

SHEET NUMBER

E-600

SHEET NO. OF

GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF ALL UTILITIES AND PIPING, AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
2. EXACT LOCATIONS AND MOUNTING HEIGHTS OF PLUMBING FIXTURES SHALL BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS.
3. SEE ARCHITECTURAL DRAWINGS FOR HANDICAP FIXTURE LOCATIONS AND MOUNTING HEIGHTS. INSULATE ALL EXPOSED WATER AND DRAIN PIPING BELOW LAVATORIES AND SINKS WITH TRUEBRO NO. 103 E-Z INSULATION KIT AND OFFSET P-TRAP TO WALL. ALL WATER CLOSET FLUSHING LEVERS SHALL BE TO THE WIDE SIDE OF THE STALL.
4. TRAPS FOR ALL SINKS SHALL TRAP STRAIGHT BACK TO WALL WITH ALL REQUIRED OFFSETS HAPPENING WITHIN THE WALL.
5. PLUMBING WORK SHALL BE INSTALLED SO AS TO AVOID INTERFERENCE WITH ELECTRICAL AND MECHANICAL EQUIPMENT AND STRUCTURAL FRAMING.
6. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING ACCESS PANELS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN AND THE ELECTR. LIGHTING LAYOUT.
7. CLEANOUTS SHALL BE INSTALLED WHERE READILY ACCESSIBLE. THE CONTR SHALL COORDINATE ALL CLEANOUT LOCATIONS WITH EQUIPMENT, CABINETS, ETC., AND THE ARCHITECT PRIOR TO ANY INSTALLATION.
8. VALVES, UNIONS, ETC. TO BE SAME SIZE AS PIPE UNLESS OTHERWISE INDICATED ON DRAWINGS.
9. WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH ALL APPLICABLE CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THIS PROJECT:
10. BEFORE FABRICATION OR INSTALLATION THIS CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL EQUIPMENT PROVIDED UNDER ANOTHER SECTION OF SPECIFICATIONS. EXACT ROUGH-IN LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED IN FIELD.
11. WASTE AND VENT PIPING SHALL SLOPE AT 2% UNLESS OTHERWISE INDICATED.
12. VALVES, TRAP PRIMER, WATER HAMMER ARRESTERS OR OTHER EQUIPMENT SHOWN IN WALLS OR ABOVE NON-ACCESSIBLE CEILINGS SHALL BE INSTALLED BEHIND AN ACCESS PANEL.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING AND REPAIRING ALL AREAS DAMAGED BY HIS OPERATIONS.
14. CONTRACTOR SHALL PAID FOR ALL PERMITS AND FEES AND BE RE-INVERSE BY OWNER.
15. EXISTING PIPING DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH MATERIALS TO MATCH EXISTING BY THE CONTRACTOR.
16. EXISTING PIPING, FIXTURES AND EQUIPMENT THAT IS REMOVED SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
19. PIPING THROUGH FIRE RATED WALLS SHALL BE PER U.L. FIRE RESISTANCE SYSTEM NO. WL1001. SEE ARCHITECTURAL PLANS FOR ALL LOCATIONS.
21. ANCHORAGE DETAILS FOR EQUIPMENT WHICH ARE NOT APPROVED DURING PLAN REVIEW ARE SUBJECT TO APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND STRUCTURAL ENGINEER PRIOR TO INSTALLATION AND INSPECTION BY THE PROJECT INSPECTOR.
22. HOT WATER PIPING SHALL BE INSULATED IN ACCORDANCE WITH SECTION 123, TABLE 1-G OF THE TITLE 24 REGULATIONS.
23. ITEMS NOT SPECIFIED OR SHOWN IN THE DRAWINGS OR SPECIFICATIONS BUT NECESSARY FOR THE COMPLETE CODE APPROVED INSTALLATION OR FOR COMPLETE OPERATION OF THE SYSTEM/INSTALLATION SHALL BE PROVIDED AS REQUIRED AT NO ADDED COST TO THE OWNER.
25. PIPE SIZES SHALL BE THE SAME AS THE UPSTREAM PIPE SIZES UNLESS OTHERWISE INDICATED ON PLAN.
26. UNLESS SPECIFIED ON STRUCTURAL DRAWINGS, ANY ALTERATION OR MODIFICATIONS A STRUCTURAL ELEMENTS BY CUTTING, DRILLING, BORING, BRACING, WELDING ETC. SHALL HAVE WRITTEN APPROVAL STRUCTURAL ENGINEER OR RECORD AND DSA PRIOR START WORK.
27. CLEANOUTS SHALL BE INSTALLED AS PER SECTION 707.0 AND 719.0 OF THE PLUMBING CODE.
28. EACH PLUMBING VENT SHALL TERMINATE NOT LESS THAN TEN FEET FROM OR AT LEAST THREE FEET ABOVE ANY WINDOW, DOOR, OPENING, AIR INTAKE, OR VENT SHAFT.
29. WATER CLOSET BOWLS FOR PUBLIC USE SHALL BE OF THE ELONGATED TYPE.
30. PROVIDE TRAP PRIMERS AT FLOOR DRAINS AND SINKS TO MAINTAIN WATER SEALS.
31. POTABLE WATER SYSTEMS ON THIS PROJECT SHALL BE DISINFECTED PRIOR TO USE ACCORDING TO THE METHOD SET IN SECTION 609.9 OF THE PLUMBING CODE.
32. PLUMBING DRAWINGS ARE DIAGRAMMATIC. THE LOCATION AND ELEVATION OF ALL PLUMBING PIPING IS APPROXIMATE AND SHALL BE VERIFIED AND COORDINATED WITH ALL OTHER TRADES, STRUCTURAL CONDITIONS, AND BUILDING CONSTRUCTION PRIOR TO START INSTALLATION.
33. CONTRACTOR SHALL PROVIDE A COMPLETE SET OF AS BUILT DRAWINGS ACADD AND PDF TO OWNER AT END OF PROJECT COMPLETION.
34. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING AND PAYMENT OF BUILING PERMITS.
35. UPON COMPLETIONS OF CONSTRUCTION WORK THIS CONTRACTOR SHALL PROVIDE AS-BUILT DRAWING INDICATING ACTUAL INSTALLATION WORK PLUMBING WORK.

PLAN CHECK NOTES

1. APPLIANCE AND PLUMBING VENTS AND THE DISCHARGE OUTLET OF EXHAUST FANS SHALL BE AT LEAST TEN (10) FEET IN A HORIZONTAL DIRECTION, OR THREE (3) FEET ABOVE THE OUTSIDE-AIR INTAKES FOR THE HVAC UNITS.
2. CLEANOUTS FOR HORIZONTAL BUILDING STORM DRAINS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 719 OF THE CALIFORNIA PLUMBING CODE
3. EACH VENT SHALL RISE VERTICALLY TO A POINT OF NOT LESS THAN SIX (6) INCHES IN HEIGHT ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE BEFORE BEING CONNECTED TO ANY OTHER VENT.
4. PLUMBING FIXTURES , EQUIPMENT AND COMPONENT SHALL BE APPROVED AND COMPLY WITH AB1953.
5. THE INSTALLATION OF ABS/PVC SHALL COMPLY WITH THE 2016 C.P.C. 604.1.1.

PIPE MATERIAL SCHEDULE

SERVICE	LOCATION	MATERIAL
DOMESTIC WATER	COLD WATER	- PIPING SHALL BE TYPE 'L' COPPER ASTM B88 WITH WROUGHT COPPER SWEAT FITTINGS ANSI B16.22.DOMESTIC WATER.
	HOT WATER	- PIPING SHALL BE TYPE 'L' COPPER ASTM B88 WITH WROUGHT COPPER SWEAT FITTINGS ANSI B16.22.DOMESTIC WATER. - PROVIDE INSULATION FOR ALL HOT WATER PIPES.
SANITARY WASTE AND VENT PIPING	ABOVE FLOOR	NO HUB CAST IRON PIPE AND FITTINGS, ASPHALTUM COATED, ASTM A-888 OR ASTM A-74 WITH HUSKY SD-4000 OR MISSION HEAVY DUTY STAINLESS STEEL FOUR-BAND COUPLINGS. ABS OR PVC SCH. 80 (CITY AND OWNER APPROVAL REQUIRED)
	BELOW GRADE	NO HUB CAST IRON PIPE AND FITTIINGS, ASPHALTUM COATED, ASTM A-888 OR ASTM A-74 WITH HUSKY SD-4000 OR MISSION HEAVY DUTY STAINLESS STEEL FOUR-BAND COUPLINGS. ALTERNATE BELOW GRADE : ABS OR PVC SCH. 80 (CITY AND OWNER APPROVAL REQUIRED)

CALGREEN MANDATORY MEASURES

FIXTURE FLOW RATES	
FIXTURE TYPE	MAXIMUM FLOW RATE
SHOWERHEADS (LOW FLOW)	2 GPM @ 60 PSI
LAVATORY FAUCETS NONRESIDENTIAL	0.4 GPM @ 60 PSI
KITCHEN FAUCETS	1.8 GPM @ 60 PSI
WASH FOUNTAINS	1.8 [RIM SPACE (IN.) / 20 GPM @ 60 PSI]
METERING FAUCETS	0.2 GALLONS / CYCLE
METERING FAUCETS FOR WASH FOUNTAINS	0.20 [RIM SPACE (IN.) / 20 GPM @ 60 PSI]
GRAVITY TANK TYPE WATER CLOSETS	1.28 GALLONS / FLUSH (1)
FLUSHOMETER TANK WATER CLOSETS	1.28 GALLONS / FLUSH (1)
FLUSHOMETER VALVE WATER CLOSETS	1.28 GALLONS / FLUSH (1)
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.28 GALLONS / FLUSH (1)
URINALS	0.5 GALLONS / FLUSH

(1) INCLUDES SINGLE AND DUAL FLUSH WATER CLOSETS WITH AN EFFECTIVE FLUSH OF 1.28 GALLONS OR LESS: SINGLE FLUSH TOILET - THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.28 GALLONS (4.8 LITERS). THE EFFECTIVE FLUSH VOLUME IS THE AVERAGE FLUSH VOLUME WHEN TESTED IN ACCORDANCE WITH ASME A 112.19.233.2.
DUAL FLUSH TOILETS - THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.28 GALLONS (4.8 LITERS). THE EFFECTIVE FLUSH VOLUME IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH. FLUSH VOLUMES WILL BE TESTED IN ACCORDANCE WITH ASME A 112.19.2 ASME A 112.19.14.

NO LEAD REQUIREMENT

ALL MATERIALS, DEVICES, ETC...INSTALLED IN THE DOMESTIC HOT AND COLD WATER SYSTEMS SHALL COMPLY WITH CALIFORNIA HEALTH AN SAFETY CODE SECTION 116875- AB1953

SCOPE OF WORK

REMOVAL OF EXISTING PLUMBING FIXTURES AND MAKE TOILET ROOM COMPLIANT.
REMOVAL OF EXISTING ELECTRICAL WATER COOLER AND INSTALL NEW ADA COMPLIANT WATER COOLER.

ABBREVIATIONS

ABBREV.	DESCRIPTION
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AVG	AVERAGE
BEL	BELOW
BLDG	BUILDING
CD	CONDENSATE DRAIN
CLG	CEILING
CFH	CUBIC FEET PER HOUR
CW	COLD WATER
DN	DOWN
DWG	DRAWING
FA	FROM ABOVE
FB	FROM BELOW
FLR	FLOOR
FT	FEET
GPM	GALLONS PER MINUTE
HW	HOT WATER
HWR	HOT WATER RETURN
I.E.	INVERT ELEVATION
IN	INCHES
LBS	POUNDS
QTY	QUANTITY
SD/RD	STORM DRAIN/ROOF DRAIN
RW	RECLAIMED WATER
OD	OVERFLOW DRAIN
SOV	SHUT-OFF VALVE
SQFT	SQUARE FEET
SS	SANITARY SEWER
TEMP	TEMPERATURE
TYP	TYPICAL
WV	WASTE/VENT
W	WASTE

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	WASTE PIPING (BELOW)
	WASTE PIPING (ABOVE)
	VENT PIPING
	COLD WATER PIPING
	HOT WATER PIPING
	HOT WATER PIPING RETURN
	RISER
	ELBOW UP
	ELBOW DOWN
	TEE PIPING DOWN
	BREAKLINE
	BALL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	UNION
	CLEAN OUT
	FLOOR CLEAN OUT
VALVE_NO	CIRCUIT SOLVER
X-X	DETAIL CALL OUT

PLUMBING FIXTURE AND EQUIPMENT SCHEDULE

ITEM	FIXTURE	ROUGH-IN CONNECTIONS					DESCRIPTION
		SOIL/ WASTE	VENT	HOT WATER	COLD WATER	GAS	
WC-1 (E)	(E)WATER CLOSET	4"	2"	--	1"	--	REFURBISH EXISTING FIXTURE, FLUSH VALVE AND TOILET SEAT AND LEAVE IN OPTIMUM WORKING ORDER.
WC-2(E)	(E)WATER CLOSET (ADA)	4"	2"	--	1"	--	REFURBISH EXISTING FIXTURE, FLUSH VALVE AND TOILET SEAT AND LEAVE IN OPTIMUM WORKING ORDER.
U-1	URINAL 0.125 GPF	2"	1 1/2"	--	3/4"	--	AMERICAN STANDARD NO. 6590.001, VITREOUS CHINA WALL HUNG URINAL, COMPLETE WITH SLOAN "ROYAL" NO. 186-0.125 SFSM, ONE PIECE WALL HANGER BRACKET WITH ANCHORS. CONNECT TO EXISTING UTILITIES.
U-2	URINAL (ADA) 0.125 GPF	2"	1 1/2"	--	3/4"	--	SAME AS UR-1 EXCEPT MOUNTED AT ACCESSIBLE HEIGHT (SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT AND EXACT FIXTURE LOCATION.)
L-1	LAVATORY	2"	1 1/2"	1/2"	1/2"	--	AMERICAN STANDARD NO. 0495.221 "OVALYN", UNDERCOUNTER MOUNTED SINK. COMPLETE WITH BRADLEY POINT OF USE MIXING VALVE MODEL S59-4000. MOEN "TOUCH FREE" OPERATION ELECTRONIC FAUCET MODEL NO. 8559 WITH GRID DRAIN, BRASS CRAFT FLEXIBLE SUPPLIES, 1/4 TURN STOP. L.A. PATTEN "P" TRAP. TRU BRO 103-EZ PIPE PROTECTION.
L-2	LAVATORY (ADA)	2"	1 1/2"	1/2"	1/2"	--	SAME AS L-1 EXCEPT FOR HANDICAP ACCESS (SEE ARCHITECTURAL PLANS FOR DESIGNATED ACCESSIBLE FIXTURE).
L-3	LAVATORY (ADA)	2"	1 1/2"	1/2"	1/2"	--	AMERICAN STANDARD "LUCERNE" LAVATORY MODEL 0355.012 WITH MOEN "TOUCH FREE" OPERATION ELECTRONIC FAUCET MODEL NO. 8559 WITH GRID DRAIN, BRASS CRAFT FLEXIBLE SUPPLIES, 1/4 TURN STOP. L.A. PATTEN "P" TRAP, TRU-BRO PIPE 100-EZ COVERS. BRADLEY POINT OF USE MIXING VALVE MODEL S59-4000.
EWC-1	ELECTRIC WATER COOLER	2"	1 1/2"	--	1/2"	--	ELKAY EZH2O MODEL NO. LZWS-LRPBM28K. WALL MOUNTED, STAINLESS STEEL, LEAD FREE, WASTE STRAINER, BOTTOM PLATE, AND BOTTLE FILLER. 115V, 1Ø, 1/4HP REFRIGERATOR.
HB-1	HOSE BIBB	--	--	--	3/4"	--	ACORN MODEL 8121 WITH INTEGRAL VACUUM BREAKER
WHA-1	WATER HAMMER ARRESTER	--	--	--	--	--	JR SMITH SERIES 5000, SIZE AND INSTALL PER PDI REQUIREMENTS

PLUMBING SHEET INDEX

CALIFORNIA GREEN CODE NOTES

ALL PLUMBING FIXTURES ON PLUMBING FIXTURE AND EQUIPMENT SCHEDULE MEET THE REQUIREMENTS OF CALIFORNIA GREEN CODE 2016.

- WATER REDUCTION 5.303.2
- WATER CONSERVING PLUMBING FIXTURES AND FITTINGS 5.303.3
- WATER CLOSETS 5.303.3.1
- URINALS 5.303.3.2
- WASTEWATER REDUCTION 5.303.4
- STANDARDS FOR PLUMBING FIXTURES AND FITTINGS 5.303.6
- CPC CHAPTER 14

APPLICABLE CODES

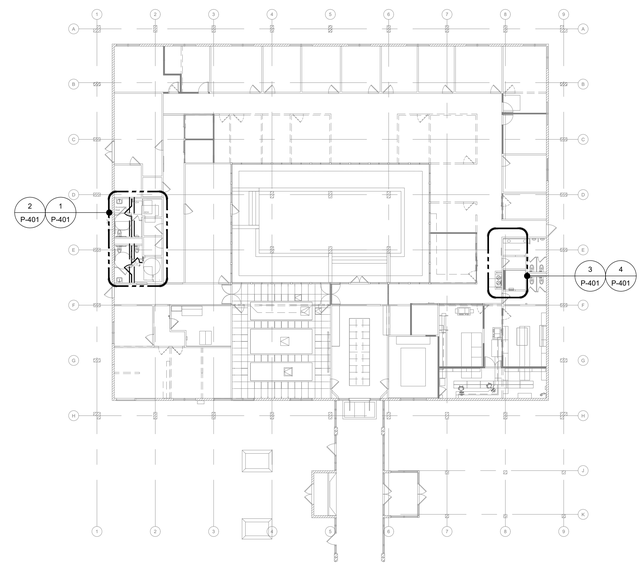
- 2016 CALIFORNIA BUILDING CODE
- 2016 CALIFORNIA ELECTRICAL CODE
- 2016 CALIFORNIA FIRE CODE
- 2016 CALIFORNIA ENERGY CODE (TITLE 24)
- 2016 CALIFORNIA PLUMBING CODE WITH ALL APPLICABLE AMENDMENTS
- 2016 CALIFORNIA GREEN CODE WITH ALL APPLICABLE AMENDMENTS
- 2016 CALIFORNIA GREEN BUILDING CODE

GREEN BUILDING STANDARD NOTES

1. MINIMUM OF 50% OF NON HAZARDOUS CONSTRUCTION WASTE TO BE RECYCLE. CGC 5.713.8.1.
2. TESTING AND ADJUSTING OF NEW SYSTEMS SHALL COMPLY AS OUTLINED IN CGC SECTION 5.713.10.4.2.
3. OPERATIONS AND MAINTENANCE SCHEDULE (O&M) AS LISTED IN CGC SECTION 5.713.10.4.5 SHALL BE DELIVERED TO THE BUILDING OWNER OR REPRESENTATIVE AND THE FACILITIES OPERATOR.
4. DURING CONSTRUCTION, ENDS OF DUCT OPENING ARE TO BE SEALED, AND MECHANICAL EQUIPMENT IS TO BE COVERED. CGC 5.714.4.3.
5. VOC'S MUST COMPLY WITH THE LIMITATIONS LISTED IN SECTION 5.504.4 AND TABLES 4.504.1, 5.504.4.1, 5.504.4.2, 5.504.4.3 AND 5.504.4.5 FOR: ADHESIVES, SEALANTS, PAINTS, AND COATINGS, CARPET AND COMPOSITION WOOD PRODUCTS. CGC 5.714.4.4 .

ADA REQUIREMENTS

1. WATER CLOSETS:
   A. THE HEIGHT OF ACCESSIBLE WATER CLOSETS SHALL BE A MINIMUM OF 17" (431.8 mm) AND A MAXIMUM OF 19" (482.6 mm) MEASURED TO THE TOP OF TOILET SEAT. FLUSH CONTROLS SHALL BE OPERABLE, BE AN OSCILLATING HANDLE WITH A MAXIMUM OPERATING FORCE OF 3 LBS. (.67 N) OR BY A REMOTE LOW VOLTAGE BUTTON. THE HANDLE OF THE BUTTON SHALL BE LOCATED SO IT IS OPERABLE WITHOUT REQUIRING EXCESSIVE BODY MOVEMENT. (LOCATE ON WIDE SIDE OF WATER CLOSET).
2. LAVATORIES:
   A. LAVATORIES SHALL BE MOUNTED WITH A CLEARANCE OF AT LEAST 29" (736.6 mm) FROM THE FLOOR TO THE BOTTOM OF THE APRON WITH KNEE CLEARANCE UNDER THE FRONT LIP EXTENDING A MINIMUM OF 30" (762 mm) IN WIDTH WITH 8" (203.2 mm) MINIMUM OF DEPTH AT THE TOP. TOE CLEARANCE SHALL BE THE SAME WIDTH AND SHALL BE A MINIMUM OF 9" (228.6 mm) HIGH FROM THE FLOOR AND A MINIMUM OF 17" (431.8 mm) DEEP FROM THE FRONT OF THE LAVATORY.
   B. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.
   C. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS. (22.2 N). LEVER-OPERATED PUSH TYPE AND ELECTRONICALLY CONTROLLED MECHANISMS ARE EXAMPLES OF ACCEPTABLE DESIGNS. SELF-CLOSING VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.



FLOOR PLAN | NTS | 1

CLIENT
MWDOC
18700 WARD STREET
FOUNTAIN VALLEY, CA 92708

PROJECT NAME

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

ADMINISTRATIVE BUILDING-SEISMIC RETROFIT, ADA COMPLIANCE AND TENANT IMPROVEMENT

ENGINEER/ARCHITECT
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REV.	DESCRIPTION	DATE
	AS-BUILT PER CONTRACTOR NOTES	04/22/2022

RECORD DRAWINGS

PROJECT NO.	18X093.00
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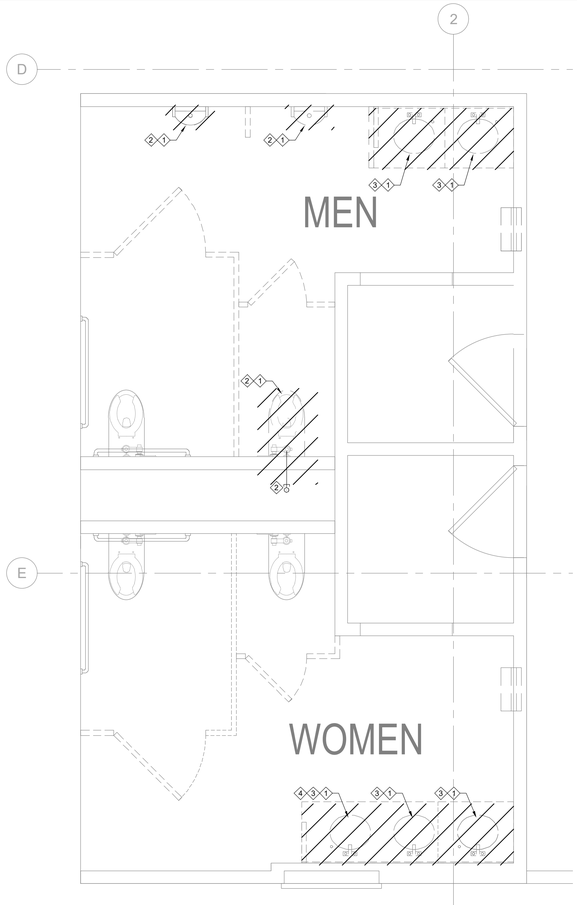
DRAWN BY	
CHECKED BY	

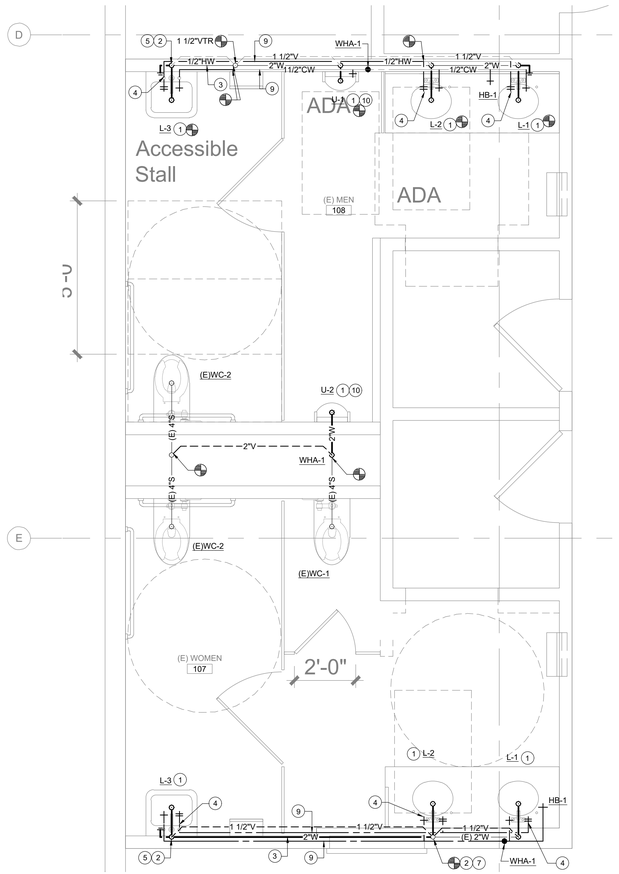
SHEET TITLE
PLUMBING GENERAL NOTES

SHEET NUMBER
P-001

SHEET NO. OF



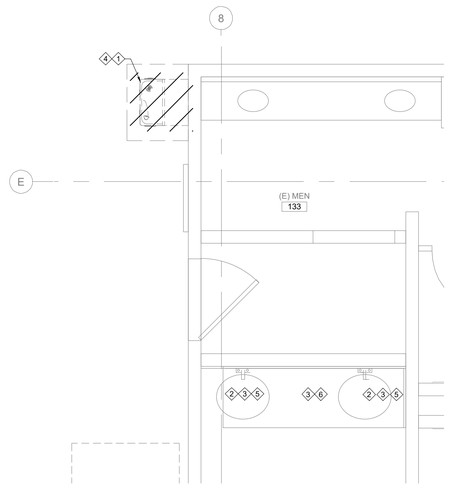
DEMOLITION FLOOR PLAN | 1/2"=1'-0" | 2



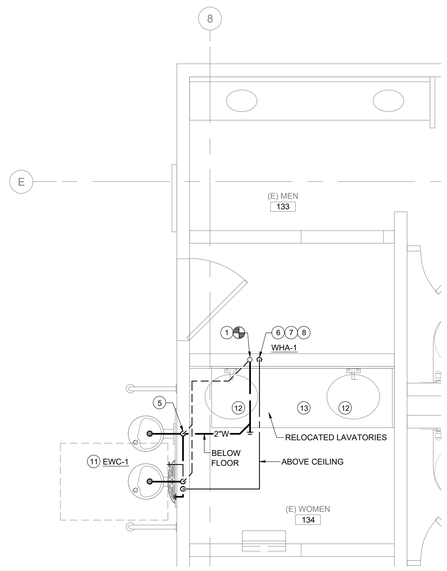
RENOVATION FLOOR PLAN | 1/2"=1'-0" | 1

DEMOLITION KEYNOTES

1. REMOVE EXISTING PLUMBING FIXTURES DISPOSE OF IN AN APPROVED MANNER.
2. TEMPORARILY CAP SOIL/WASTE IN WALL FOR RECONNECTION.
3. TEMPORARILY CAP HW & CW IN WALL FOR RECONNECTION.
4. CAP UTILITIES GAS TIGHT WITHIN WALL.
5. REMOVE EXISTING PLUMBING FIXTURES AND SALVAGE FOR REINSTALLATION
6. REMOVE EXISTING WATER HEATER AND SALVAGE FOR REINSTALLATION.



DEMOLITION FLOOR PLAN | 1/2"=1'-0" | 4



RENOVATION FLOOR PLAN | 1/2"=1'-0" | 3

KEYNOTES

1. CONNECT FIXTURE TO EXISTING UTILITIES IN WALL. FIELD VERIFY EXACT LOCATION.
2. ROUTE 1 1/2"V IN WALL AND CONNECT TO EXISTING VENT FROM LAVATORIES.
3. ROUTE 2"W IN WALL AND CONNECT TO EXISTING WASTE FROM FIXTURES.
4. EXTEND HW & CW TO FIXTURE FROM EXISTING HW & CW SUPPLY TO LAVATORIES.
5. 1 1/2"V UP, 2"W DOWN.
6. CONNECT 1/2"CW TO EXISTING CW SUPPLY TO LAVATORY.
7. CONNECT 1 1/2"V TO LAVATORY VENT.
8. CONNECT (N) 2"W TO EXISTING LAVATORY WASTE BELOW FLOOR.
9. NEW 1/2"HW & 1/2"CW TO CONNECT TO EXISTING HW & CW SUPPLY FROM EXISTING LAVATORY. FIELD VERIFY EXACT LOCATION.
10. ROUGH-IN AND CONNECT 2"W, 1 1/2"V & 3/4"CW TO URINAL.
11. ROUGH-IN AND CONNECT 1/2"CW, 2"W & 1 1/2"V TO EWC-1.
12. REINSTALL EXISTING LAVATORY PER NEW COUNTER TOP. ROUGH-IN & CONNECT 4"W, 1/2"HW & 1/2"CW TO RELOCATED FIXTURE AND FAUCET.
13. CONNECT SALVAGED WATER HEATER TO EXISTING ROUGH IN.

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ENLARGED FLOOR PLAN

SHEET NUMBER

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